

FREE FLIGHT

news

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FFn DIARY

April 8-10	Dave Anderson Memorial World Cup. F1A	April 23-24	BMFA London Gala. 23rd: C/G, C/R, C/P,
Narrandera NSW, Australia	F1B F1C. World Cup event. Contact: Phil Mitchell, email: filnoels@bigpond.net.au	Salisbury Plain	C/E, P30, CO2. 24th: F1H, F1G, F1J, BMFA1/2A, Mini Vintage, E30, HLG-CLG. Contact: C Strachan, tel 01223860498, chris.strachan@btinternet.com .
April 8-11	Euro & Asia Cup of Moldovia. F1A F1B	April 30 – May 1	BMFA 1st Team Selection. F1A, F1B, F1C.
Nalchik, Russia	F1C F1P. World Cup event. Contact: Naloev Nikolay, email: naloev@mail.ru	Salisbury Plain	N.B Pre-entry only by 16th April for 1st & 2nd Team Selection.. Plus on May 1 (Sun) Classic Glider, SLOP, Mini Vintage. Contact: Phil Ball 01332 665361. e-mail: phil.ball@ntlworld.com
April 9-10	Harghita Cup. F1A F1B F1C F1H F1P F1Q.	May 6	Swiss Cup. F1E. World Cup event. Contact:
Deva, Romania	World Cup event. Contact: Kiss Istvan, ktamara@netter.ro www.fai1abc.com	Liptovsky	Alfred Andrist, tel: +41 33 336 72 05, email:
April 10	BMFA 3rd Area. Vint' G (Plugge), C/R	Mikulas, Slovakia	familie.andrist@hispeed.ch
Area Venues	(Gamage), F1C (Halfax/Plugge), HLG-CLG (Plugge), F1Q. Contact: Area Comp Secs.	May 7-8	7th: Liptov Cup, 8th: Peter Nosko
April 11-14	Naloev Cup. F1A F1B F1C F1P. World Cup	Liptovsky	Memorial. F1E World Cup events. Contact:
Nalchik, Russia	Contact: Naloev Nikolay naloev@mail.ru	Mikulas, Slovakia	Jakub Drmla, R. Viesta 91, 036 01 Martin, Slovakia, mobile: +421 948 777 493, email: jdrmla@gmail.com
April 11-16	FAI F1D World Championships for Free	May 7	Salonta Cup. F1A F1B F1C F1H F1Q.
Slanic Prahova, Romania	Flight Indoor Model Aircraft. F1D. www.frmd.ro	Salonta, Romania	World Cup event. Contact: Sándor Vincze, tel: +40 72 47 17 992, email: vinczesg@gmail.com www.fai1abc.com
April 12-14	Australian Free Flight Society	May 8	Szabó Miklós Memorial Contest. F1A F1B
Narrandera, NSW, Australia	Championships. F1A F1B F1C. World Cup. Phil Mitchell filnoels@bigpond.net.au	Salonta, Romania	F1C F1H F1Q. World Cup event. Contact: József Guti, tel: +36 20 36 35 573, email: gutijozsef74@gmail.com web: www.dobosistvanmk.lapunk.hu
April 16-17	Southern Cross Cup. F1A F1B F1C. World	May 8	Croydon Wakefield Day. See FFm 1603.
West Wyalong, NSW, Australia	Cup event. Contact: Roy Summersby, roydi132@optusnet.com.au	Salisbury Plain	F1B, 4oz Vint Wake, 8oz Vint Wake, Marcus Lightweight Challenge. Start 10.00, F1B in rounds. Contact: Ray Elliott, tel 0208 997 7745, ray.elliott8@btinternet.com
April 16	Jumbo Cup. F1A F1B F1C F1H. World Cup	May 14 (Saturday)	BMFA 2nd F1E (Team Selection). F1E.
Lucenec, Slovakia	event. Contact: Dana Domokova, tel: +421 90514 5107 gabika1988@hotmail.com	Near Melton	Contact: Ian Kaynes 01252 512538. m: 0794 185 2144
April 16-17	16th: Oberkotzau World Cup, 17th:	Mowbray	
Förlberg, Germany	Förlberg Cup. F1E. World Cup events. Contact: Peter Kuttler, peter-kuttler@web.de		
April 17	BMFA 1st F1E (Team Selection). F1E.		
Near Melton	Contact: Ian Kaynes 01252 512538, m: 0794 185 2144		
Mowbray			
April 23	Kup Slavonije Baranje. F1A F1B F1C F1Q.		
Ceminac, Croatia	World Cup. Vinko Tomljanovic, tel: +385 31 208 262, vinko.tomljanovic@gmail.com web: www.ak-osijek.hr		

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Web site address: www.freeflightnews.org.uk

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FREE FLIGHT WITH ELECTRIC MOTORS

Extracted from article by Per Grunnet in Modellflyvenyt

The hardest thing in getting started in electric free flight is not the models - they are easy to make and easy to fly with – but the concepts. Some of the concepts are familiar from everyday life - volts, watts and amperes are known in homes with electrical outlets, switchboards and electrical appliances. The word energy - or at least energy consumption – is known from the electricity bill. Many probably remember voltage, power and current from physics at school. Other concepts are less well-known, such as the joule, the energy-limiter, LiPo-cells, C-value, and internal resistance.

We can consider the concepts from something we have mastered – cars. Car engines are described by horsepower car, sometimes with (in brackets) how many kilowatts the engine provides. Kilowatt has something to do with power and electrical appliances, not with petrol and cars! When cars originally appeared, replacing coaches pulled by horses, they created a connection between the traditional horse-drawn vehicles and new automobiles by finding something describing the power of the engine in horsepower. The engine's horsepower is a measure of how much power the engine can make to accelerate the car or to overcome the air resistance when driving fast.

Let's compare the performance of two identical cars with different engines. Factory data for a new Citroen Cactus is:

With a 82 HP engine: top speed 172 km/h, acceleration from 0-100 km/h in 15.0 sec.

With a 110 HP engine: top speed 188 km/h, acceleration from 0-100 km/h in 9.3 sec.

The power - horsepower - is 34% larger for the powerful engine compared to the weaker one. The acceleration is 38% more (i.e. slightly more than proportionally). The top speed is increased only about 9%. It requires almost the same work to accelerate the car, regardless of the engine (weight difference is minimal) The top speed with the large motor is only 9% higher partly because of the rapidly increasing air resistance at higher speeds - it increases with the square of speed increase, which also applies to model aircraft.

Before we move on, a few words about the names and abbreviations of units. In metric standard international practice and units are denoted with lower case letters (e.g. ampere, watt, volt, joule) despite the fact that these are the names of people concerned with that quantity. However, when abbreviated such quantities are shown in upper case (A, W, V, J), whereas other quantities stay in lower case, such as metre, hour, second abbreviated as m, h, s.

Like the horsepower of a car we use watts to describe the power of an electrical device. We measure electrical apparatus in terms of the power supplied to it and use this as a target for the output effect. A 40 W incandescent lamp uses 40 W to light optimally, but not all of that is converted to light. An electric motor which runs at full power at 100W will not deliver all the 100W to the propeller.

Power is not the only determination of an electrical device. We know we must choose the voltage, a nominal 230V for European mains supplies, and current – we know that in a fuse box a fuse of 10A allows only up to 10A to flow. The relationship between these quantities is that the power (W) is obtained by multiplying the voltage (V) by the current (A).

When using power for some time then work is performed. The energy you use in work is measured as the power multiplied by

the time it is used. A joule is the amount of energy delivered by a power of one watt applied for one second. **

For free flight models we usually use outrunner brushless motors. That they are brushless means that they do not have carbon brushes on commutators. Instead on electronics have taken over control of the magnetic field through the ESC – Electronic Speed Controller. This pulses the current to the winding so that the magnetic field is constantly changing and the permanent magnet, which in an outrunner motor is on the outside of the motor, follows the pulses as they rotate round the motor. Another function combined with the ESC is the BEC (Battery Eliminator Circuit) which provides an electrical supply suitable for the timer and servos.

Note that the ESC needs some simple programming for your specific installation and this can be done with an interface device available with the ESC. You may have to tell the ESC the type of battery you are using, and that the brake function is operating so that the motor stops rapidly when commanded.

Virtually all electric free flight models use electronic timers to control both the motor, sending a stop signal to the ESC, and the servo for DT and, if necessary, other trim and control functions. There are a number of good and cheap electronic timers on the market, and it would be quite complicated to organise a mechanical timer to interact with the motor and the ESC.

Batteries are usually lithium-polymer (LiPo). In E36 / F1S, you can only use batteries with a maximum of two cells. Each LiPo cell has a nominal voltage of 3.7 V and can be charged up to 4.2 V. In F1Q you can use as many cells as you like, the limitation is how much energy you can use on each flight.

LiPo batteries require care when charging and also when you store them between flying sessions (maximum life is obtained if they are stored at partial charge, not fully charged, nor fully discharged which may also damage them. A key parameter of the battery is its C rating. This shows how fast you can discharge the battery without damaging it. A battery rated 1 C and a capacity 1 Ah can provide a current up to 1 A. For a typical E36 / F1S with a battery of 300 mAh then a 1 C rating will allow a current of 0.3 A. I use 325 mAh batteries rated at 70 C in my E36 models. This means that the manufacturer of the batteries thinks I can pull $70 \times 0.325 \text{ A} = 22.75 \text{ A}$ from the battery without it being damaged. Producers of LiPo batteries sometimes inform both a C-number for continuous discharge and a C-number for "burst", that is, the short loads such as when the engine starts. The "burst" count is usually twice the "normal" C number. For FF we need batteries which can supply a lot of energy quickly, i.e. batteries with high C numbers. However, be prepared that a 70 C battery can easily be better than a 90 C battery, because there is no standard for how the C value is calculated. Basically, the battery's internal resistance determines the C value. The smaller the internal resistance of the battery, the faster it can give its energy without getting so hot that it will be destroyed

There are two competition classes for electric models in the FAI: F1Q and F1S.

In model terms F1S is identical with the popular US E36 class. The maximum span of the model must be 36 inches (91.4 cm), the minimum weight must be 120 grams and the model may have DT but not other control on the flying surfaces. The LiPo battery must not have more than two cells. There are slightly different rules for the flights, but both E36 and F1S are flown to 120 sec maximum. There is great freedom to choose the motor and battery - select a powerful motor and a battery with enough energy to exploit the power and it will be heavy and well above the minimum weight of 120g. Alternatively, choose

a light engine and a lightweight battery and come close to the minimum weight with consequently lower sink rate of the model.

F1Q is based on the allowable amount of energy you have to use per flight. It is 4 joules per gram of model weight. For example, a model of 350g is allowed $4 \times 350 = 1400$ joules per flight. Any model weight above 500g is ignored, so that 2000J is the maximum amount of energy you can use. This usually means that most stay below a weight of 500g. Variable wing area and camber is not allowed in F1Q, hence flaps and folding wings are prohibited. The motor may run only for a maximum of 40s. Competition format is the same as F1A, F1B, F1C - three minute max in normal rounds and a flyoff with increasing max.

The energy limit in F1Q can be observed in two ways. Either the power taken from the battery half-way through the run is measured and the motor run allowed (in seconds) is calculated by dividing the energy allowed (J) by the power (W). Since the power is measured halfway through the run but the run time is unknown, the process must be repeated a few times to get the correct run. The final motor run is rounded down to the nearest second. The other approach is to fit an energy limiter in the model's electrical system. The energy limiter is programmed with the amount of energy to be allowed and it will then cut the power to the motor when that has been used. This method is far preferable, but you must invest in a limiter for each model. I use one from Sidius which costs almost €100 each but it has a push button, so you do not need to connect to a computer. Other limiters are less expensive but require a computer to change the settings.

Under the former F1Q rules, when the models had more energy available and a shorter maximum motor run, it was popular to trim for a fast, vertical climb and a motor run of 6-10 seconds. The idea was that it gave all the energy put into height. Currently, under the lower energy limit and longer run, there seems to be broad consensus among F1Q flyers that a long run and moderate rate of climb is preferable. Typically a steady climb for 30-40 seconds without the need to bunt at the end of the run. Some obtain the long run with geared motors driving a large folding prop. One European favorite is 4.1: 1 gear drawing a 14x6" or 14x8" propeller at 3-4,000 rpm.

Gears on an electric motor will always cost a little energy because of friction in the gear. Therefore, some have not used gears but fly direct drive and a higher propeller speed. However, a large, slowly rotating propeller is more efficient than a small, fast rotating propeller. It is not conclusively proven which way to convert the energy to altitude is the optimum. Here we go back to the example of the two Cactus where the powerful engine gave better acceleration than the weak engine could provide, and air resistance at speed played a part. Perhaps something similar could be applicable to an F1Q model that climbs quickly? F1Q is a class with an opportunity for those who like to experiment!

*** An alternative definition of a joule is that it is the work done by a unit force (a newton) when it moves a mass of 1 Kg the distance of 1 metre. To support a mass of 1 Kg against gravity requires a force of 9.81 N and so 9.81 J will be required to raise 1 Kg the height of 1 metre. This scales to that same 9.81J energy raising a mass of just 1 g to a height of 1000m. In the F1Q rules we are allowed 4 J per gram of model weight, so a perfectly efficient motor in a drag-free model would raise it $4 / 9.81 \times 1000 = 407\text{m}$. The conclusion is that real model efficiency is often not much more than 33%.*

NEWS FROM BMFA FF TECH COMMITTEE

All correspondence re this news to the FFTC Secretary:

Chris Strachan, 56 Way Lane, Waterbeach, Cambridge, CB25 9NQ. E-mail: chris.strachan@btinternet.com

The FFTC met at the Leicester office on March 1.

Future of Free Flight Meeting

The future of Free Flight Conference was held at Husbands Bosworth on 31 January. It was attended by 70 people including the BMFA Chairman and Chief Executive. A full collection of the papers is available on the BMFA website. The following are some ideas that the FFTC are putting forward for discussion with a view of implementation from 2017.

Suggested Ideas for 2017 –for comments

These ideas are developed from the January future of free flight conference. We will implement a staged process in order to ensure that we carry out things in a controlled way and in an effort to avoid errors.

Thus these ideas represent a first stage in a process of possible changes. The ideas that are presented, at this stage, are designed to exert control over the flying of existing models. There are at this time no restrictions to the model specifications.

Radio dethermalisers (RDT)

The requirement has been linked to the classes plus a catch all.

- All "F" classes – A, B, C, E, G, H, J, P, Q
- BMFA glider, rubber, power and electric
- Combined glider, rubber, power and electric
- In addition any models weighing over 250 grammes or 1.25 metres wingspan

All competitions except FAI

- The attempt rule will be removed, all flights to count.
- The fly off window will be reduced to 5 minutes. Towlines will not be run out until the start. Rubber motors must not be wound or engines fuelled

Centralised competitions

- These events will likely need additional requirements.
- Flown to a launch line – models launched down wind of the line will be disqualified. The flight will not be classified as an attempt but will be lost. See also note re attempt removal.
- Flown to rounds, round length will be decided on the day but will not be less than one hour.
- Maximums to be totally flexible with a decision for each specific round.

The above will be organised within the discretion of the CD.

Note: The above ideas need to be fleshed out in detail to ensure that a correct fit will all sections of the rule book is created.

Because of the nature of the above and the major impact that it will have on the way that we fly free flight models no other rule changes will be made in 2017. The only exception will be safety or ideas that can be interpreted as adding additional controls to the management of free flight.

Please send your Feedback on the above before 01/06/16 to Chris Strachan at the address provided at the top of this Newsletter.

Trevor Grey

After some illness Trevor Grey has decided to step down from membership of the FFTC. He is making a good recovery and will be back on the flying fields before long.

Trevor has been a member of the Committee for 12 years and at various times has been Council Representative, Rules Officer and PRO and has dealt with the planning and production of the Competition Calendar.

The Committee wishes to thank him for all his work during this time and look forward to competing against him on the flying field for many years to come.

Mark Benns

The FFTC is very pleased to accept Mark Benns offer to be seconded onto the committee for the remainder of this year.

Season Ticket - Reminder

The cost of the Season Ticket for 2016 has been set at £50. It represents great value covering entry fees to all contests on the Calendar apart from the Nationals. It includes both open internationals, the two trials events, centralised and area centralised contests. If you buy one the only other contest fees remaining will be the Site Access Charge for Area Centralised contests (if applicable) and the Nationals.

To purchase a season ticket for 2016 please write to John Carter at:- La Petite Maison, 45 Grindley Lane, Meir Heath, Stoke on Trent, Staffs, ST3 7LN

Please send John your BMFA membership number, name and address, a cheque for £50, your mobile and home telephone numbers. Please also include a stamped addressed envelope for the return of the card.

Please note John has a new email address - nordicf1a@outlook.com

Free Flight Nationals

The Free Flight Nationals will take place on 28/29/30 May at RAF Barkston Heath. There will be some building works on the eastern edge of airfield that we will have to take into consideration with our competitions. This may result in us having to amend the max to avoid landing in the Contractors Compound Area and could even lead to flying being postponed or cancelled if circumstances demand that action. Without an alternative suitable venue we have to accept these limitations. Please be considerate to the organisers during the event, they will do their absolute best to provide a meaningful competition. It is imperative that we all act responsibly to avoid losing this site for future Free Flight Nationals. The situation is acute and extremely fragile.

An entry form for the Nationals is available on request. It will be available on the BMFA website in a fillable PDF format. Entries must be received by May 16.

Team Selection 2016

For the 2017 World Championships. Entry forms and revised procedures for team selection have been issued. Closing date for entries is April 15.

Contest Calendar

Version 3 of the 2016 Calendar has the following changes:

April 23-24 London Gala Contact Chris Strachan tel 01223860498, chris.strachan@btinternet.com

May 28-30 Nationals Contact Mike Woodhouse, email changed to MichaelWoodhouse1942@gmail.com

August 20 Southern Gala Contact now Peter Tribe, tel 01225862748, petertribe46@talktalk.net

September 24-25 Stonehenge and Equinox Cups See below for contacts.

Stonehenge And Equinox Cups

The 2016 Stonehenge and Equinox Cup World Cup contests are being organised by Richard Jack and Peter Martin assisted. Thanks to Richard and the Peter for offering to take on the running of these contests. The information is below.

Saturday Sept 24 Stonehenge Cup F1A, B, C/P, Q

Sunday Sept 25 Equinox Cup F1A, B, C/P, Q

Flying Site

The site is situated to the south of the B390 between Shrewton and Chitterne and will be signposted from the B390.

The terrain is undulating rough grassland crossed by dirt roads and tracks. The land is a military training area, which is carefully managed to preserve the history and wildlife. Model retrieval is usually on foot.

The area must be kept clean and tidy at all times and rules to protect the site must be observed.

Please note-there are no catering facilities available - competitors must bring their own food and drink.

Programme

Events will start at 09.00. There will be 5 rounds plus fly-offs flown from a flight line. The Max for round 1 will be 240 seconds. All other rounds will be 180 seconds Max. These maximum times and program may vary according to circumstances. All competitors will receive a gift.

Rules

The relevant sections of the FAI Sporting Code will be followed. All competitors must hold a valid FAI licence.

Entry

Entry forms are available from the contacts below

Competitors from the UK who wish to compete in either or both events need to post their entry forms to:- Peter Martin, 23 Woodland Court, Dyke Road Avenue, Hove, UK, BN3 6DP complete with payment cheque made out to 'BMFA'.

Competitors residing outside the UK should email their completed entry form(s) to ffworldcupUK@gmail.com.

Overseas entry fees may be paid on the day in £, \$ or Euros.

Entry forms must be received by not later than Friday September 16

Trophies

These will be awarded down to 3rd place for each class.

Timekeepers

Timekeepers will not be provided by the organisers for the rounds. Competitors must find their own timekeepers. Timekeepers will be allocated by the organisers for Fly-offs.

Further information

Please contact:-

Richard Jack or Peter Martin ffworldcupuk@gmail.com

or, Peter Tribe petertribe46@talktalk.net

Accommodation and camping information is available on request from Peter Tribe.

HOLIDAY ON ICE, GJOVIK, NORWAY, MARCH 12

Report by Ian Kaynes

The first Holiday on Ice was run in 1988 and, after 28 years, I finally went to one this year. In many ways it was very much as I had expected from the descriptions by the regular attendees. The hostel provided a good common base for everyone, even if it was less crowded than it had been at the best attended events some years ago. Possibly one factor is that so many people are now going to Lost Hills in February that they are less likely to go to Norway soon afterwards.

At Gjovik the lake surface was water, but at the chosen location about 25km north of Gjovik the ice on the lake was a good 60cm thick with about 20cm of snow on top. As a newcomer I managed to miss the required exit and the road was then a motorway with the next exit 15km further north, but I still made it well before the start. The weather has been variable some years, but this year was a classic with very gentle drift which changed direction during the day and generally only very light lift.

There were competitors from 9 countries including a large contingent from France and Walt Ghio as the sole intercontinental visitor. I was surprised that there were so many glider flyers – it seemed enough exertion to walk through the snow, let alone do a fast launch, including the optional extra of diving on to the snow as the last move. In view of the rather heavy going for those without skis the first round max was set at 180 and there was a 30 minute break after the first round. The same max was retained all day, the break reduced to 15 minutes and finally no break before the last two rounds, when the wind had dropped to nothing and then reversed. F1Q had only two entries – Ossi Kilpelianen dropped a few seconds on his first flight and then some more time in the third and fourth rounds.

In the good flying conditions more than half made the flyoff in both F1A and F1B. 10 gliders made the 7 minute max. but half an hour later only one F1B managed it, giving Norwegian flying Dag Larsen the victory. The final F1A flyoff was taken by Per Findahl just a few seconds ahead of Mikhail Kosonozhkin, with Bertrand Pouzet only a further 12 seconds behind him.

F1A 27 flew 15 full scores

1	P Findahl	SWE	900	+420	+507
2	M Kosonozhkin	RUS	900	+420	+500
3	B Pouzet	FRA	900	+420	+488
4	E Jensen	DEN	900	+420	+425
5	A Persson	SWE	900	+420	+423
6	L Nielsen	DEN	900	+420	+409
7	E Ragot	FRA	900	+420	+391
8	S Jensen	DEN	900	+420	+383
9	T Weimer	GER	900	+420	+272
10	A Klemetsen	NOR	900	+420	+157
11	J Nyhegn	DEN	900	+399	
12	P Kuikka	FIN	900	+339	
13	A Klungrehaug	NOR	900	+338	
14	K Huber	SWE	900	+309	

F1B 14 flew 10 full scores

1	D Larsen	NOR	900	+420
2	B Eimar	SWE	900	+402
3	V Nereng	NOR	900	+389
4	T Bortne	NOR	900	+384
5	M Woolner	GBR	900	+381
6	W Ghio	USA	900	+374
7	J Drapeau	FRA	900	+359

F1Q 2 flew

1	I Kaynes	GBR	900	
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Mike Woolner launching in the flyoff



Per Findahl preparing for first flyoff

Flapper F1B of Oleg Fedorov at Holiday on Ice



General view of wings – carbon structure but finished in white, geodetic bracing between the leading edge and the spar.



Root wing section with flap raised



Root wing section in glide mode

SWEDISH MOOSE CUP, SÄKYLÄN PYHHÄJÄRVI, FINLAND, MARCH 17

F1A 28 flew

1	M Kosonozhkin	RUS	990	+360
2	O Karhunen	FIN	990	+319
3	V Poljaev	RUS	990	+214
4	R Hellgren	SWE	990	+204
5	A Moistus	EST	990	+27
6	A Pushkov	RUS	981	
7	P Pitkanen	FIN	972	
8	J Savolainen	FIN	952	
9	K Valkonen	FIN	947	
10	T Hanhila	FIN	933	
11	M Henriksson	FIN	915	
12	T Tahka (J)	FIN	770	
13	T Pajunen	FIN	709	
14	J Carter	GBR	643	

F1A-Junior 2 flew

1	T Tahka	FIN	770	
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F1B 10 flew

1	J Isotalo	FIN	990	+240
2	M Solodov	RUS	990	+220
3	B Eimar	SWE	990	+195
4	M Woolner	GBR	715	
5	S Zubakov	RUS	567	

F1B-Junior 1 flew

1	K Kreis	EST	7	
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F1C 1 flew

1	J Roots	EST	210	
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F1Q 3 flew

1	J Juslin	FIN	990	
2	O Kilpelainen	FIN	688	

WINTER CUP F1E, HRANICE, CZECH REPUBLIC, MARCH 19-20

Report by Ian Kaynes.

This pair of events were due to take place on March 5 and 6, but a few days before that they were postponed for two weeks because the flying area and approach tracks were waterlogged. Improved conditions were confirmed only a few days before the new dates. Several of the original entry list did not attend the postponed event, but I made last minute bookings of flights, car, etc, and was on the site Saturday morning to find beautiful conditions – the track and the fields were dry and there was just a light northerly wind. Well, except that it was gently snowing as well, but that stopped soon after I had turned my car round to stop the snow accumulating inside through the open rear door. The field containing the usual north slope was out of bounds and so the contest was flown from a side ridge which proved to be better, in particular avoiding the row of trees upwind of the north slope that claimed several models last year. The launch line was well back from the edge of the gentle ridge but once you reached that the air was smooth with gentle lift. The max was set at 4 minutes for the first three round and six people made all three, so the max was increased to 5 minutes for the final two rounds. The wind was now down to 2 m/sec or less. The final two rounds eliminated only one and so five were in the flyoff. Stanislav Kubit launched at the start of the period and was to be the only person to reach the 7 minute max. Three others flew soon after and the other Pole in the group, Frantisek Kanczok, flew last and took second place, with a time 2 seconds more than mine.

The weather forecast had been accurate for wind on Saturday, so the forecast of a strong westerly wind on Sunday lead to the choice of a nearby west-facing slope. It was the first time I had been there and found it very good – a crescent shaped of hill facing to the west with gentle slopes, grass fields and clear for a long way upwind. Moreover it is communal land and there is no fee to use it, but available only until mid-April each year, when agriculture stops its use. We waited part way along the track until it was confirmed that the rest of the track was passable – which it was – but, while waiting, yesterday's winner Kubit turned round and left. The Drmla family had been able to attend only on the Saturday, so entry was slightly less than Saturday.

The wind speed during the day changed more than forecast . Instead of starting windy and dropping slightly in the afternoon, it started with very light wind. At 9.30 I tested a

calm weather model in 2m/s wind. But when the first round started at 10.00 I flew a needed a windy weather model with 350g ballast because the wind had risen to 7 or 8 m/sec. In the smooth air and enough ballast the 4 minute max seemed easy, but a few people blew backwards or sideways for short flights. The wind had dropped to 6 m/sec for round 3 when the max was increased to 5 minutes. It continued to drop so that in round 4 I flew the regular model I had flown the day before. The choice of 50g ballast was right to give a very satisfying flight – the model settled into wind about 50 yards in front of the start line and soared, staying just in front of the centre of the start line and DTing down to land just in front of the line. Jaromir Orel and I were now the people with full scores. Jaromir flew at the start of the round and advanced quite rapidly along the left ridge, eventually flying beyond it and coming down 18 seconds short of the max. I flew later down the centre of the site, looking quite low at the halfway point but it just gathered enough lift on the lower sloping field to max and DT from about 40ft.

Winter Cup I March 19

F1E 19 flew

1	S Kubit	POL	500.00	+420
2	F Kanczok	POL	500.00	+337
3	I Kaynes	GBR	500.00	+335
4	E Kozuchova (J)	SVK	500.00	+324
5	M Drmla	SVK	500.00	+312
6	W Dziuba	POL	472.08	
7	W Moj	POL	467.25	
8	V Levy	CZE	455.33	
9	J Kabacinski	POL	441.00	
10	J Blazek	CZE	439.17	

F1E-Junior 3 flew

1	E Kozuchova	SVK	500.00	+324
2	V Kamenicky	CZE	434.58	

Winter Cup II March 20

F1E 16 flew

1	I Kaynes	GBR	500.00	
2	J Orel	CZE	494.00	
3	W Moj	POL	491.25	
4	E Kozuchova (J)	SVK	445.00	
5	F Kratena	CZE	442.84	
6	F Doupovec	CZE	435.83	
7	J Blazek	CZE	434.17	
8	J Kabacinski	POL	429.66	

F1E-Junior 2 flew

1	E Kozuchova	SVK	445.00	
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TRIMMING/SPORT FLYING ON AREA 8, SALISBURY PLAIN

Please note that anyone trimming or sport flying on Area 8 Salisbury Plain, must be in possession of a current permit. An application form is available from the BMFA office. A Red Card holder must also be present if the permit holder does not also possess a Red Card.

The above does not apply for contest flying

BMFA 2ND AREA MEETING, MARCH 6

Area	Weather
Scotland	Dry then light snow 5 to 10
North West	Cold 18 mph
Northern	Dry light winds
Midland	Cool 4 to 8mph
East Anglia	Cold light wind
Western	Cold 10 mph
South East	Sun 10 mph light later
Southern	Cold 5 to 10 mph

F1H 19 flew

1	J Cooper	Biggles	10.00	+4.30
2	R Heap	Biggles	9.42	
3	C Parry	Biggles	9.17	
4	M. Gibbs	Bristol & West	8.48	
5	D Oldfield	Vikings	8.35	
6	D Cox	Crookham	8.34	
7	N Parry	Biggles	8.25	
8	D Truluck	Vikings	8.23	
9	G Hart	Vikings	8.16	
10	P Tribe	Bristol & West	8.08	

P30 19 flew

1	T Challis	Crookham	6.00	+1.53
2	P Hall	Crookham	5.53	
3	C Strachan	Biggles	5.50	
4	J Northrop	Morley	5.22	
5	C Redrup	Crookham	5.20	
6	W Dennis	Grantham	5.06	
7	P W Woodhouse	Morley	4.52	
8	M Woodhouse	Vikings	4.39	
9	T Bailey	Grantham	4.28	
10	A Moorhouse	Vikings	4.08	

F1J 6 flew

1	P Chapman	Vikings	10.00	+2.47
2	F Chilton	Crookham	9.35	
3	A Chilton	Crookham	9.07	

BMFA 1/2 A 3 flew

1	C Foster	Morley	5.36	
2	S Barnes	Morley	5.36	

Combined Electric 9 flew, 5 full scores

1	P Watson	Midland	7.30	+6.40
2	T Grey	Crookham	7.30	+5.34
3	C Redrup	Crookham	7.30	+4.13
4	A Shepherd	Crookham	7.30	+3.41
5	P Tolhurst	Crookham	7.30	+2.01

Combined HLG/CAT 9 flew

1	P Ball	Grantham	6.24	
2	N Allen	East Grinstead	5.00	
3	M Cook	Crawley	4.51	
4	I Clark	CM	4.37	
5	G Percival	Grantham	4.28	

Plugge

	2nd Area:-	P30	CE	F1J	Total
1	Crookham	195	187	150	987
2	Bristol & West	63		50	328
3	Morley	152	66		318
4	Vikings	116		100	266
5	Grantham	132			219
6	Midland		100		180
7	Croydon	89			164
8	Birmingham			50	130
9	Biggles	89			129

BIGGLES LEAGUE

For complete details see:

www.bigglesleague.hightsociety.org/results.html

Points from Second Area event

F1H

1	J Cooper	9
2	R Heap	6
3	C Parry	4
4	M Gibbs	3
5	D Oldfield	2
6	D Cox	1

F1J

1	P Chapman	9
2	F Chilton	6
3	A Chilton	4
4	S Dixon	3
5	S White	2
6	P Tribe	1

INTERNATIONAL INDOOR FLY-IN

The sixth International Indoor Fly-In will be held on November 12-13 at Nijmegen, Netherlands. The hall is the Jan Massinkhal on the outskirts of Nijmegen. The has 2400 sq m floor; and the height is nearly 8 meters (Cat. 1 hall) with a fairly smooth ceiling.

The preliminary schedule for the event: Saturday 12 November 8.30-19.00, Sunday 13 November 8.30-18.00. A detailed schedule will be provided middle October to the flyers that have entered. This schedule will also be published on www.iifi.nl.

The classes are: F1D, F1M, F1M small (Juniors), F1L, F1N (Indoor Glider), Sainte, F4D (Open scale rubber), F4E (Open scale electric/CO2), F4F (Peanut), Pistachio, Kit scale and Profile scale.

The F1M small class is used in the Netherlands for juniors. Rules are similar to the standard F1M rules, with the only deviation being a limit of the wing chord to 160 mm.

Please note that all duration classes will be flown on normal weight, full motors. This is the same as previous years. The minimum weight for Sainte in the Netherlands is 3 grams.

The entry fee is €57.50 for seniors and €37.50 for juniors. This includes: entry in unlimited amount of classes for the contests; lunch package on both days; buffet meal on Saturday night with all flyers. For accompanying people that are interested in participating in the lunch (both days) and buffet the fee is €20.

Contact for full information and entry form: E-mail: internationalindoorflyin@gmail.com Internet: www.iifi.nl Telephone: 0031 648938502

UK COMPETITION NEWS

2016 Brumfly

Brumfly will take place at North Luffenham on June 19th 2016, starting at 09.00. Classes will be: F1H, F1S (E36), combined HLG/ CLG, SLOP, Mini Vintage rubber, plus 'Payload P30'* and 'Combined A2 glider'** (see below).

All classes (except HLG/CLG) will be run to a format of FOUR flights in long rounds, flights commencing upwind of a line. The line will be positioned to allow adequate space and terrain to function normally.

The first round from 09.00- 12.00 will be followed by three two- hour rounds, concluding at 18.00.

The intention is that there will be no 'holds' or interruptions to flying. The max for each round will be announced and displayed at control no later than 15 minutes before the start of that round.

Flyoffs will be to a progressive max. Engine/ motor run may be reduced where applicable (adequate notice will be given).

If weather and retrieving conditions demand, the second flyoff may be a 'Le Mans' style tie- break; after appropriate preparation time, competitors will wind/ tow and launch their models *within* a time- slot (e.g. 4 minutes) at the end of which timing of any model (s) still airborne will stop.

*Payload P30

P30 models, as per BMFA rules, but must carry 10 grammes of ballast. The model must weigh at least 40g less motor without the ballast, and models which weigh over 40g must still carry the full 10g. Ballast need may be banded on externally so long as it is safe. The use of wheel balance weights (available cheaply on eBay) is recommended and these will be available from control on the day if required.

**Combined A2 Glider

Models must conform to F1A rules. Towline 50 metres for all types. Prizes will be awarded to the winners in three categories;

'F1A overall', for which all entrants are eligible. 'Non-bunt A2', for which any model with a fixed-incidence tail qualifies. 'Classic Nordic', for A2 designs conforming to BMFA Classic or Vintage Glider specs.

For further information contact Stuart Darmon stuardarmonf1a@yahoo.com 01858 882057 or Gavin Manion gavin.manion84@gmail.com 01543 422509

INTERNATIONAL COMPETITION NEWS

The date for the Herend Cup at Tapolca, Hungary has been changed again. This event, which is not a World Cup event, will now be October 29-30.

Harghita Cup run by Hungary in Romania on April 9-10 will now be at Deva instead of Salonta.

The F1E events in Slovakia – Swiss Cup on May 6, Liptov Cup on May 7 and Peter Nosko Memorial on May 8 – have been moved from Liptovsky Mikulas to Martin, because there were not enough people to run it at Liptovsky Mikulas. Revised contacts for the Slovakia events is Jakub Drmla, R. Viesta 91, 036 01 Martin, Slovakia, mobile: +421 948 777 493, email: jdrmla@gmail.com

NOTICEBOARD

SMALL PRECISION SCREWDRIVERS. From Martin Dilly:

<https://www.7dayshop.com/products/7dayshop-tools-45-piece-mini-precision-screwdriver-tool-kit-set-WH2-7DS-TOOL-140>

Clear top carry/presentation case 45 piece precision screwdriver tool kit set with the following bits: Torx T3, T4, T5, T6, T7, T8, T9, T10, T15, T20 Hex/Metric M2.5, M3.0, M3.5, M4.0, M4.5, M5.0, M5.5, Hex Slot/Allen 0.9, 1.3, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0 Flat -1.0, -1.5, -2.0, -2.5, -3.0, -3.5, -4.0, Phillips +1.0, +1.5, +2.0, +2.5, +3.5 Tri-wing 2.0, TA (Triangular) 2.0, U Fork 2.6, Pentalobe 0.8 (Apple iPhone), Cylindrical tip 1.5mm Socket set: M5.5, M5.0, M4.5, M4.0, M3.5, M3.0, M2.5 Swivel top handle with magnetic bit holder 12cm extension rod with magnetic bit holder. Can be extended in and out of handle for required length 12.5cm flexible extension rod which allows access to tight spots. Has a spinning grip at bit end for more secure grip onto head without affecting rotation.

For £7.49 I was surprised at how well-made mine was when it arrived.