

FREE FLIGHT news

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FFn DIARY

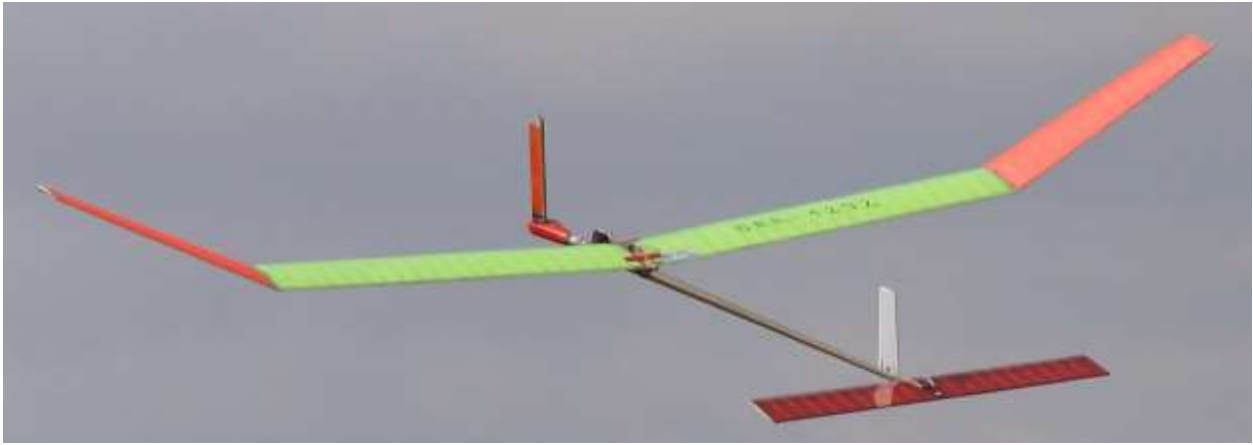
May 11 Salonta, Romania	Salonta Cup. F1A F1B F1C F1Q F1H. World Cup event. Contact: Sándor Vincze, tel: +40 72 47 17 992, email: vinczesg@gmail.com web: http://www.fai1abc.com	June 2 Port Meadow, Oxford	Dreaming Spires Free Flight Rally. See FFn 1902. F1G, F1H, Mini-vintage rubber (max 34"), Vintage/Classic Glider comb, Hi-Start glider, E30/P30/CO2 comb, HLG/Catapult comb, Scale. All flyers must be insured. NO streamers on poles, thermistors or bubbles. No i/c powered models outside scale competition. Contacts Andrew Crisp, 4 Grove St, Oxford OX2 7JT, tel 01865 553800, and Laurence Marks laurencemarks64@googlemail.com
May 12 Salonta, Romania	Szabó Miklós Memorial Contest. F1A F1B F1C F1Q F1H. World Cup event. Contact: tel: +36 20 363 5573, email: gutijozsef74@gmail.com web: http://dobosistvanmk.lapunk.hu	June 2-9 Tachov - Svetce, Czech Republic	FAI F1D European Championships for Free Flight Indoor Model Aircraft. F1D. Contact: Ivo Kornatovsky, tel: +420 602 445 455, email: adpro@iol.cz
May 19 Peak District or near Melton Mowbray	BMFA 2nd F1E Team Selection. Contact Ian Kaynes 01252 512538. kaynes@btinternet.com	June 7-9 Vize - Kirklareli, Turkey	Istanbul Free Flight Cup. F1A F1B F1C. World Cup event. Contact: Mehmet Arslan, tel +90 222 5912112 arslanthk@yahoo.com web: http://www.turkey-ff.org
May 24-26 Samara, Russian Federation	Almaty Cup. F1A F1B F1C F1P F1G F1H. World Cup event. Contact: Dzhamel Bekeyev, tel: +7 927 702 2071, email: old@mail.ru aviasergei@mail.ru web: http://www.aviasamara.ru/	June 8 Viborg, Denmark	Jutland Heath Cup. F1A F1B F1Q F1S. World Cup event. Contact: Peter Rasmussen, tel: +45 5593 9325 / +45 4016 5727, email: pr.arkitekter@gmail.com web: www.modelflyvning.dk/elite
May 25-27 Barkston Heath	BMFA National Championships. Day 1: B/G Thurston), B/R (Model Aircraft), B/P (Shelley), B/E, Tailless (Lady Shelley), Women's BG/BR/BP (SAA), Junior BG/BR/BP (Frog Junior), CLG, E30. Day 2: F1A (Ronytube), F1B (Fred Boxall), F1C (Eddie Cosh), F1QUK (Astral), Vintage R/P (Jubilee), SLOP (Peter Harris), HLG (Nats), P30, Novice Glider & Rubber (J) (junior kit glider & junior kit rubber), Bowden. Day 3: F1H (BA), F1G (308), F1J (Quickstart), BMFA ½A (Hales), Mini Vintage (Weston), CO2 (Sparklets), E36, Vintage Glider, Classic R/P, Classic Glider. Plus Junior and overall category championships. Contact: Mike Woodhouse, 01603 457754, e-mail: michaelwoodhouse1942@gmail.com SAM 35 to run non championship events, contact for SAM Events John Ashmole 01406 370188 email: johnashmole@yahoo.co.uk	June 8 Sombor, Serbia	23rd Backa Cup. F1A F1B F1C F1H F1Q. Contact: Andrija Sil, tel: +38 16 31 70 5231, andrijasil@yahoo.com www.aeroklubsombor.com
Entries close on May 13.		June 8 Lessini, Italy	Trofeo Gar Rovereto. F1E. World Cup event. Contact: Maurizio Tomazzoni, tel: +39 335 5650970 / +39 347 4308840, email: mautom60@gmail.com f_ceccarini@tin.it web: http://www.asdvoli.it
		June 9 Lessini, Italy	9th Volare Lessini. F1E. World Cup event. Contact: Maurizio Tomazzoni, See June 8
		June 9 Area Venues	BMFA 4th Area event. C/G, F1B (Gutteridge), C/P Team (Keil/Plugge), C/R, C/E, Vintage R/P (Plugge), Mini Vintage, E30 (Plugge), HLG/CLG.

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Compiled and produced by Ian Kaynes



M12, F1E BY ALEXANDER WINKER

Alexander Winker:

The drawing, first shown in Thermiksence, shows M12, my big model with the I became German Champion in 2017 and used in my success in the 2018 World Cup events

The wing was from Milan Valastiak of Slovakia, who has built a couple of this type according to a design of Anton Frieser. I kept the middle section and build new outer parts with a bigger span. For this I used parts from the catalogue of Jaromir Orel (the lighter version of D-box etc.). The wing is covered with Icarex and has a turbulator. The tips have a washout of about 2 degrees.

The tail has a self-made carbon-tube as spar. The tail section has a straight underside, the top is "after curve ruler".

For the fuselage I use a tube from Jaromir Orel.

For the rest of the model I tried to save as much weight as possible, especially the head (magnet housing) is formed out of a block of balsa.

The magnet is composed of small plates and cubes, together as heavy as the usual rod, but more compact.

CG is at 50% of the mean wing chord,

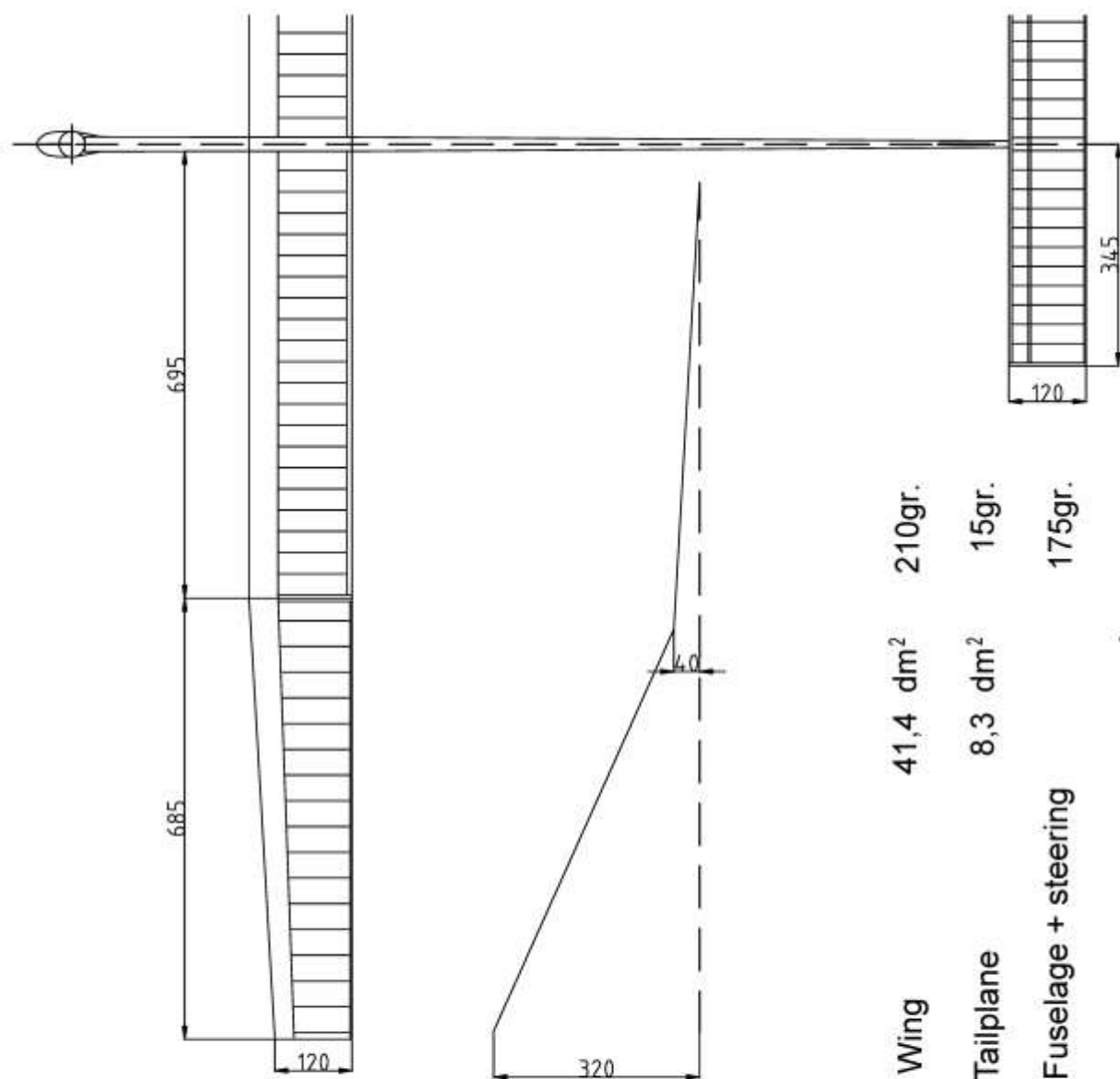
I use a timer from Roland Schlechter for the flop start and a self-built control,

The model is often used with 100 grams of additional weight.

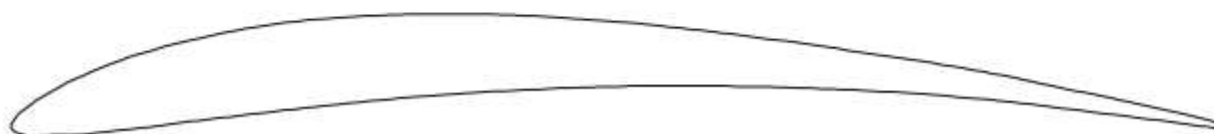
The Anton Frieser modified Ritz wing section is shown on page 38..

Photos from Slovakia 2018 by Chris Morton

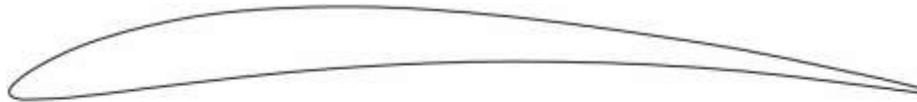




Wing	41,4 dm ²	210gr.
Tailplane	8,3 dm ²	15gr.
Fuselage + steering		175gr.
Total	49,7 dm ²	400gr.



Section: Anton Frieser (modified Ritz)



WinkerM12							
Nose radius=0.65 Upper surface max=9.25 at x=36.7							
Camber max=6.04 at x=43.3 Max thickness=7.25 at x=22.5 Area=448.8							
X	0	1.25	2.5	3.75	5	7.5	10
YU	0	1.488	2.347	3.084	3.730	4.842	5.738
YL	0	-0.841	-0.842	-0.806	-0.772	-0.553	-0.281
X	12.5	15	20	25	30	40	50
YU	6.487	7.115	8.137	8.765	9.102	9.210	8.615
YL	0.028	0.359	0.955	1.538	2.071	2.820	3.237
X	60	70	80	90	95	100	
YU	7.541	6.142	4.542	2.485	1.421	0.230	
YL	3.255	2.931	2.228	1.069	0.434	-0.230	

UK MODEL FLYING UNDER THREAT

David Phipps, Chief Executive, and Ian Palliser, Chairman, have issued the following call to action to BMFA members

Following the recent sudden announcement of Flight Restriction Zones around protected aerodromes capturing the operation of all unmanned aircraft of any weight and at any height (and the unreasonable three week notice period given for our clubs and members to comply), the CAA have dropped yet another bombshell on us with no prior consultation or warning.

On Friday 25th April the CAA published a consultation (CAP1775) on their proposed charges for the registration of all operators of all unmanned aircraft between 250g and 20kg – which includes the vast majority of our members – and also mandates online competency testing and age restrictions. The fee the CAA is proposing for registration is **£16.50 per annum** which we consider to be excessive and a barrier to participation. Full details of the consultation and how to respond are at can be found here: <https://consultations.caa.co.uk/finance/drone-registration/> **The consultation will close on 7 June 2019 and we would ask all members to respond.**

An interesting direct comparison not included is France where their equivalent registration scheme for model flyers is completely free and valid for five years. Another interesting comparison from a non EASA country is Australia, where being a member of a registered club within the national model flying association (MAAA) is all that is required.

There are some significant costs associated with the ongoing upkeep of the CAA registration system which they are expecting you to pay for. We believe that their figures for the predicted number of users registering in the system are also overly optimistic and the consequence of fewer users could result in even higher costs.

CAP1775 would appear to close the door firmly on what we have been fighting for on behalf of our members and perhaps explains why the DfT/CAA have been evasive and not engaging with us on policy matters in 2019. The following summarises our position and what we had hoped to achieve (which was alluded to in the Government's response to the 2018 Drone Consultation published at the start of this year):

The BMFA accepts that registration is mandated by the EASA regulations. However, our view was that the more hurdles members have to jump through, the smaller the number that will reach the end. Participation levels are already falling due

to the uncertainty and the experience in France is that even when registration is free, the additional hurdles have nonetheless had a significant negative impact with reports of a 10% reduction in participation already.

On that basis, our hope was that mechanisms could be found whereby all our members had to do was join the BMFA and everything else would be dealt with for them without any additional hurdles. Members' data would have been supplied (subject to members permission) to the CAA and we would even have accepted a nominal fee (which we were prepared to negotiate on) which we hoped to be able to subsidise for members. The BMFA were also happy to explore I.D. verification for our data, but it was pointless committing the investment in the absence of acceptance or ongoing dialogue with the DfT/CAA.

We were also happy to assure competency, either by confirming that members held an existing achievement or by integrating a test into our new membership system.

The EASA regulations permit all of the above (though are silent on the level of fee). Article 16 of the EASA regulation states that model associations may submit registration data on behalf of their members.

The online test is only mandated by EASA for their Open Category as the competency requirements for model associations should be defined in the Authorisation issued under Article 16 (the terms of which should be agreed by discussion between the competent authority and the association).

All of the above is, of course, underpinned by the EASA Basic Regulation (EU) 2018/1139) which states:

(34) Model aircraft are considered to be unmanned aircraft for the purposes of this Regulation and are used primarily for leisure activities. Delegated and implementing acts concerning unmanned aircraft, adopted on the basis of this Regulation, should take into account that such model aircraft have so far had a good safety record, especially those operated by members of model aircraft associations or clubs which have developed specific codes of conduct for such activities. In addition, when adopting those delegated and implementing acts, the Commission should take account of the need for a seamless transition from the different national systems to the new Union regulatory framework so that model aircraft can continue to operate as they do today, as well as take into account existing best practices in the Member States.

We would argue that external testing and parallel registration does not mean that we can continue to operate as we do today.

We believe that the policy will be detrimental to the future of model flying in the UK and place requirements on us which are excessive and more onerous than those for manned aviation – despite the DfT/CAA acknowledging that model flying has established an excellent record over the last century.

Most importantly, the consultation reveals in the text that key policy decisions (such as age limits, not allowing us to register members on their behalf and repetitive competency requirements) appear to have been imposed on us in the absence of either consultation or the further discussions the DfT/CAA publicly promised. This is inconsistent with the EASA Regulations for model flying associations, because it mandates requirements which should instead be subject to negotiation and agreement with us prior to incorporation into our operational authorisation. As the consultation is limited in scope to the fee arrangements, it gives no real opportunity for comment on the wider policy issues.

What can you do to help the BMFA fight this disproportionate regulation by the CAA?

The CAA state that they *“drive to be a transparent, fair and effective regulator, which is reflected in our recent work to streamline our processes, identify and remove regulatory burdens and become more risk- focussed. We are keen to ensure that our policy proposals are prepared to take account of the value, costs and benefits of alternative options for all stakeholders”*.

Our view is that the proposals published in their consultation document (CAP1775) are inconsistent with these aims. In terms of model flying conducted within the framework of associations, they create a significant new regulatory burden (and ongoing cost) for our members, are neither risk-based nor focussed and no alternative options have been offered or discussed.

The CAA operates within the government's Better Regulation framework and its Regulators' Code, to which all UK regulators must comply. We will address each core principle in turn and explain why we believe that the CAA has failed us on every count: The Code's core principles are:

Proportionality – Regulators should intervene only when necessary; remedies should be appropriate to the risk posed, and costs identified and minimised.

We contend that the CAA regulations being imposed on BMFA Members do not comply with this principle. It has previously been acknowledged by the DfT/CAA (and recognised by EASA in their regulations) that the model flying community has established an excellent track record over almost a century of operations and this situation has not changed with the advent of the ‘drone’. The remedy proposed is entirely disproportionate to the risk posed by established model flying and maximises rather than minimises cost. It represents ‘gold plating’ of regulations which the CAA is committed to avoid.

Consistency – Government rules and standards must be joined up and implemented fairly.

The proposed regulations are not consistent with the requirements imposed on other forms of aviation (some of which do not have the excellent safety record achieved by the model flying community). No other recreational aviation activity requires the pilot to register annually or repeat a theory test every 3 years.

Transparency – Regulators should be open and keep regulations simple and user-friendly

The CAA have not been ‘open’ with us in the development of the regulations proposed in CAP1775. They have repeatedly evaded answering questions posed by the UK model flying

associations seeking clarification of what they have in store for our members. The recent requirements for Flight Restriction Zones and their proposals for registration fees in CAP1775 were sprung on us with no prior notice/discussion.

In CAP1123 (the response to the ‘Red Tape Challenge’), the CAA emphasised the *“value that we place on an open and meaningful dialogue with the general aviation community. We have many areas of work and options to explore but we recognise that it is critically important that we fully engage with stakeholders to determine their priority and appetite and to incorporate their ideas as well”*.

It is unfortunate that along with the DfT they have employed a ‘high handed approach’ resulting in a lack of engagement with the UK model flying associations (especially unfortunate given that model flyers will ultimately be the largest single stakeholder group captured by their regulations).

Targeting – Regulation should be focussed on the problem and minimise side effects.

The ‘problem’ is widely acknowledged to be unlawful multi-rotor drone operation – not established model flying (or multi-rotor operation such as FPV drone racing) within the framework of a model flying association. The EASA regulations acknowledge this by removing model flying within the framework of associations from their regulations (other than registration – which EASA state may be carried out by model flying associations on behalf of their members).

EASA only mandate online testing for model flyers operating within their ‘Open Category’ (outside the framework of Associations) and our view is that the tests should not be imposed on those members operating within our framework of affiliated clubs or those with existing ‘Achievements’ and repeat testing should not be required every 3 years.

The CAA proposals apply blanket regulations with no targeting whatsoever, disregarding the concessions granted to model flying within the EASA regulations and ignoring our excellent Achievement Scheme and track record established over many decades.

Accountability – Regulators should be able to justify decisions and be subject to public scrutiny.

This is your chance to hold the CAA to account and ask them why they are not applying their own core principles to the regulation of model flying. We would suggest that you address your letter to Richard Moriarty, the CEO at the following address:

Civil Aviation Authority

45-59 Kingsway, Holborn, London WC2B 6TE or email richard.moriarty@caa.co.uk

The Aviation Minister at the DfT - As the CAA are implementing policy developed by the Department for Transport, we would also encourage members to raise their concerns directly with the new Aviation Minister, Baroness Vere of Norbiton who you can email at Baroness.Vere@dft.gov.uk or write to at the following address:

The Aviation Minister - Baroness Vere of Norbiton.
House of Lords, London SW1A 0PW

The DfT have disregarded the concessions made within the EASA regulations for model flying in their own policy development. They have previously commented on our excellent track record for safe operation but have not recognised this by granting any concessions to us whatsoever in the policy decisions contained within CAP1775 (unlike EASA!).

In their ‘Taking Flight’ document published in January, the DfT referred to some matters which would be ‘subject to further discussion between the model aircraft flying

associations and the Department for Transport'. However, we can confirm that the promised discussions did not occur and the DfT have subsequently evaded any further meaningful engagement with us at all so far 2019. It would be entirely reasonable to ask the Aviation Minister for an explanation for the poor treatment we have received from her Department and why they broke their publicly stated promise of further discussions.

Your local MP - We would also recommend writing to your local MP to raise your concerns for the future of model flying due to the introduction of disproportionate regulations (you can find their details at: <https://www.parliament.uk/mps-lords-and-offices/mps/>). Feel free to enclose a copy of this summary. Please ask them to write to the Aviation Minister to question why the Government has not been actively engaged with the largest stakeholder group so far this year and is disregarding the concessions made within the EASA regulations for model flying conducted within the framework of associations.

We accept that members may have strong views on this situation, but please ensure that any emails or letters sent are polite and avoid being rude or abusive as this will not help!

Individually written communications are preferable, but we are happy to offer further guidance if required.

The UK Model Flying Associations will continue to work with the CAA & DfT and bring political pressure to bear to try and minimise the impact of excessive regulation on our members, but we need your support to show the strength of feeling, so please respond to the consultation and also raise your concerns directly with Richard Moriarty at the CAA, the Aviation Minister Baroness Vere of Norbiton and your local MP.

It is a source of regret that we have been put in a position where it is necessary to seek help directly from our members in this way, but please accept our thanks in advance for your support. The last time we took this step was back in the early 1990's and it helped change the direction of the CAA at that time.

Let's hope that collectively we can change some minds this time.

This call to action is just one element of a wider co-ordinated campaign. There is still a long way to go with this and please be assured it is by no means the end of the story.

ELBRUS CUP, NARTKALA, RUSSIA, April 5-9

FAI Licences not yet checked

F1A 75 flew 36 full scores

1	M Lomov	RUS	1020	+360	+480	+383
2	M Kosonozhkin	RUS	1020	+360	+480	+358
3	A Kornushenko	RUS	1020	+360	+480	+342
4	I Titov	RUS	1020	+360	+480	+301
5	S Kozyrev	RUS	1020	+360	+480	+282
6	J Butsnevich	RUS	1020	+360	+480	+261
7	A Naloev	RUS	1020	+360	+480	+260

F1A-Junior 25 flew 5 full scores

1	S Nogtev	RUS	1020	+360	+480	+256
2	P Olesov	RUS	1020	+360	+346	
3	V Sankin	RUS	1020	+360	+139	

F1B 61 flew 13 full scores

1	T Useynov	RUS	1020	+360	+299	+319
2	I Makhmutov	RUS	1020	+360	+299	+281
3	A Burdov	RUS	1020	+360	+293	
4	V Man	ISR	1020	+360	+289	
5	A Novikov	RUS	1020	+360	+280	
6	A Filippov	RUS	1020	+360	+272	

F1B-Junior 14 flew

1	V Kuznecov	RUS	1020	+360	+188	
2	A Zinovev	RUS	962			
3	S Kornushenko	RUS	917			

F1C 27 flew 15 full scores

1	A Kaitshuk	RUS	1020	+360	+480	
2	A Mesheryakov	RUS	1020	+360	+455	
3	N Rekhin	RUS	1020	+360	+414	
4	A Drozdov	RUS	1020	+360	+407	
5	L Chuchukalov	RUS	1020	+360	+399	
6	A Vyazov	RUS	1020	+360	+361	

F1PJ 8 flew 3 full scores

1	V Lipov	RUS	900	+300	+335	
2	I Trapeznikov	RUS	900	+300	+207	
3	P Polyakova	RUS	900	+184		

NALOEV CUP, NARTKALA, RUSSIA, April 9-13

F1A 70 flew 18 full scores

1	A Kornushenko	RUS	1020	+360	+480	
2	A Naloev	RUS	1020	+360	+473	
3	M Kosonozhkin	RUS	1020	+360	+295	
4	A Gorsky	RUS	1020	+352		
5	V Polyaev	RUS	1020	+281		
5	M Teterin	RUS	1020	+281		

F1A-Junior 21 flew

1	V Sankin	RUS	1020	+219		
2	A Osipov	RUS	1001			
3	A Sidorkin	RUS	998			

F1B 53 flew 20 full scores

1	V Kurabtsev	RUS	1020	+337		
2	V Afanas'ev	RUS	1020	+333		
3	A Bulatov	RUS	1020	+326		
4	I Makhmutov	RUS	1020	+322		
5	R Khuziev	RUS	1020	+294		
6	S Degtyarev	RUS	1020	+281		

F1B-Junior 8 flew

1	K Daidiev	RUS	984			
2	I Obuhov	RUS	939			
3	S Kornushenko	RUS	906			

F1C 25 flew 15 full scores

1	A Mikhailenko	RUS	1020	+360	+443	
2	S Savukhin	RUS	1020	+360	+425	
3	A Vyazov	RUS	1020	+360	+385	
4	O Kudryashov	RUS	1020	+360	+381	
5	A Nazarov	RUS	1020	+360	+378	
6	A Talanov	RUS	1020	+360	+370	

F1PJ 7 flew 3 full scores

1	I Trapeznikov	RUS	900	+300	+381	
2	V Zibirov	RUS	900	+300	+338	
3	V Lipov	RUS	900	+300	+303	

F1E WORLD CUP EVENTS, OBERKOTZAU, GERMANY, APRIL 13-14

Ian Kaynes:

Varied weather for these events. On the Saturday it was quite good with a generally north-east wind of 3 m/s, but later in the day it became more variable including periods of blowing down the slope. The contest was a flown to a three minute maximum for all rounds. The large Italian contingent- the most numerous overseas visitors – were rewarded with a win for Maurizio Tomazzoni and second for Mara Straffelini, both having maxed the first four rounds and dropped a few seconds on the last flight. Alexander Winker and Edith Mang had also been on full scores after the fourth round (*note to FAI – two ladies in the four person group with full scores with no need for artificial measures to encourage their participation*). Alex dropped a little more time than the Italian couple, while Edith scored only 24 seconds.

The forecast for Sunday was for a stronger northerly wind with slightly lower temperatures but that was to prove optimistic – it

didn't mention the fog! The launch line was established on the gentle slope on the north side of the hill with a wind of 4 to 5 m/sec and a temperature just below freezing. Initially a maximum of 150 seconds was announced. In fact it turned out to be 120 seconds and that was on the limit of visibility. With no change of conditions the contest was stopped at this point, leaving 17 people who had maxed and shared the win. The weather didn't improve, with the temperature still low it started snowing while I was making an early drive back to my hotel.

All FAI licences valid

Otto Kuttler Cup April 13

F1E 34 flew

1	M Tomazzoni	ITA	495.56
2	M Straffellini	ITA	492.22
3	F Wankerl	GER	487.78
4	A Winker	GER	485.00
5	V Zima	CZE	478.89
6	S Puttner	GER	463.89
7	N Finke (J)	GER	458.89
8	E Vanzo (J)	ITA	451.67
9	F Doupovec	CZE	449.44
10	J Blazek	CZE	444.45

F1E-Junior 7 flew

1	N Finke	GER	458.89
2	E Vanzo	ITA	451.67
3	D Vasilescu	ROU	432.78
4	O Holubec	CZE	428.34

Föhrberg Cup, April 14

F1E 31 flew 17 full scores

1	M Tomazzoni	ITA	100.00
1	F Wankerl	GER	100.00
1	A Winker	GER	100.00
1	V Zima	CZE	100.00
1	S Puttner	GER	100.00
1	N Finke (J)	GER	100.00
1	E Vanzo (J)	ITA	100.00
1	J Blazek	CZE	100.00
1	D Vasilescu (J)	ROU	100.00
1	O Holubec (J)	CZE	100.00
1	R Sartori	ITA	100.00
1	R Mang	AUT	100.00
1	O Saloum (J)	FRA	100.00
1	J Drapeau	FRA	100.00
1	A Borchia	ITA	100.00
1	H Wonka	GER	100.00
1	W Hofs	GER	100.00

F1E-Junior 6 flew 5 full scores

1	N Finke	GER	100.00
1	E Vanzo	ITA	100.00
1	D Vasilescu	ROU	100.00
1	O Holubec	CZE	100.00
1	O Saloum	FRA	100.00

PLUGGE

Correction of 3rd Area events

	Vint G	F1C	HLG	Total
1	Morley	154	110	1067
2	Crookham	192	175	710
3	Croydon		119	352
4	Biggles	77		297
5	CVA	100	124	224
6	Grantham			202
7	Midland FFC	100		200
8	East Grinstead		167	167
9	Peterborough			125
10	Bristol & West	62	24	119
11	Crawley		81	81
12	Birmingham	25		65

BMFA BRITISH FF CHAMPIONSHIPS

		Area 1	Area 2	Area 3	Total
1	S Willis	7	11	9	27
2	C Foster	13	1	4	18
3	P Woodhouse	9	4	5	18
4	I Clarke	6		9	15
5	D Cox	3		11	14
5	T Payne	4	2	8	14
7	G Percival	9	2		11
7	G Warburton	7	4		11
9	D Etherton			9	9
9	P Martin			9	9
9	C Strachan		6	3	9
9	K Taylor	3		6	9
9	P Williams			9	9
14	S Bowles		2	6	8
14	D Taylor	6	2		8
14	G Beal	3	4		7
14	C Redrup	3		4	7
14	P Watson	6		1	7
19	W Hodgkinson			6	6
19	G Peck	2	2	2	6
21	J Arnott	5			5
21	B Aslett			5	5
21	A Moorhouse	2		3	5
21	G Oulds	2	2	1	5
21	R Vaughn			5	5
21	J Williams	3	2		5
21	G Williamson		3	2	5

FREE FLIGHT FORUM



The Free Flight Forum Report is now in its thirty-fourth year and it's the biggest yet, with no less than 17 papers, covering a vast range of the topics that make free-flight so fascinating.

Only Joules and Forces	Peter Watson
Classic 1/2A Models	Simon Dixon
Trimming the Sopwith Snipe	Mike Smith

Russell Strips	Russell Peers
Testing June 2016 Tan Super Sport in April 2017	Tim Chant
Developments in carbon wing construction	Stuart Darmon
Buckminster – We’ve Got It; How Can We Use It?	Gavin Manion, Stuart Darmon
The Management of Models	Mike Woodhouse
Combined BMFA Rubber and CdH (F1G)	Phil Ball
Drone Legislation and Free Flight	Dave Phipps
The Rate of Climb of Model Aircraft (<i>ed: historical</i>)	Dr. John Gibbings
A Review of Contemporary FAI Space Modelling	Stuart Lodge
GPS versus Radio Trackers	Mike Woodhouse
About Time	Chris Edge
“W” Style Geodetic Ribbing for Model Aircraft & Microlights	Denis Oglesby
Flat Plates, Cambered Plates and Coupe Aerofoils	Alan Brocklehurst
FAI Free Flight Since the BoM	Stuart Darmon.

(Ed: The report concludes with details of contributors, for which the page order appears to be 101, 98, 99, 102, 103, 104)

The UK price is £13.00 including postage; to Europe it's £15 and everywhere else £17. Sales of the Forum Reports help to defray the heavy expenses of those representing Great Britain at World and European Free-Flight Championships. Cheques should be payable to 'BMFA FF Team Support Fund' in pounds sterling, drawn on a bank with a UK branch; you may also order by credit card, which is a lot easier (and cheaper).

Copies are available from : Martin Dilly
20, Links Road,
West Wickham,
Kent,
BR4 0QW

or by phone: (+44) (0)20-8777-5533, or by e-mail to martindilly20@gmail.com.

STONEHENGE AND EQUINOX CUP



World Cup Events

Saturday Sept 7	Stonehenge Cup	F1A, B, C/P and Q
Sunday Sept 8	Equinox Cup	F1A, B, C/P and Q

Flying Site

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

coordinates for the [site entrance](#) are 51°11'29.53"N, 1°57'32.59"W.

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 section of the FAI Sporting Code will be followed.

All competitors must hold a valid FAI licence and FAI ID number.

Entry Procedure

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 30th August 2019

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.

For further information please contact:-

Peter Martin or Richard Jack ffworldcupuk@gmail.com

Or Peter Tribe thepetertribe@gmail.com

Accommodation and Camping Information

Information is available on request from Peter Tribe:-

thepetertribe@gmail.com

CHAMPIONSHIPS NEWS

The dates of the 2020 F1D Indoor World Championships have changed. It will now be held March 26-29 2020. The venue remains as the salt mine in Slanic Prahova, Romania.

FFN

The Saturno P-30 plan in the April FFN was marked as scale 1:4, but the completed drawing was not presented to correct scale, being about 93% of the intended size. Apologies for any confusion caused, even apart from the silly lightening holes.