FREE FLIGHT news

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FFn DIARY

January 24 Ceminac, Croatia	F1N Indoor Open Ceminac. F1N. Contact: Antun Sikic, tel: +385 31 208 262, email: asikic@gmail.com, web: http://www.ak-osijek.hr
February 11-13 Lost Hills, California, USA	Kiwi Cup of New Zealand. F1A F1B F1C F1P F1Q F1E. World Cup event. Contact: Roger Morrell, tel: +1 310 483 8776, email: r_morrell@yahoo.com
February 15 Lost Hills, California, USA	North American Cup. F1A F1B F1C F1P F1Q. World Cup event. Contact: Tony Mathews, tel: +1289 316 2990, email: tmathews180@gmail.com web: http://www.torontofreeflightgroup.org
February 16-20 Lost Hills, California, USA	Bob White Max Men International. F1A F1B F1Q F1C F1G F1S F1H F1J F1P F1E. World Cup event. Contact: William M Booth, tel: +1 760 889 3201, fax: +1 760 434 8596, email: booth@boothsuarez.com
February 19 Area Venues	BMFA 1st Area. F1A (SMAE), F1G (Plugge), C/P (White), E36 (Plugge), Mini Vintage (Plugge). Contact: Area Comp Secs.
February 25 Viabon, France	14th Criterium Philippe Lepage. F1B. World Cup event. Contact: Jean pierre Challine, 13 chemin des chêneaux, 91220 Bretigny sur Orge, France, tel: +33 6 1195 57 11, email: mjp.challine@sfr.fr acgalichet@orange.fr
February 26 Nova Pazova, Serbia	8th Koplas Pro cup. F1N. Contact: Martin Grubic, Kralja Petra 1, Karadordevica 27, Serbia, tel: +381 638 658 182, email: martin.grubic@yahoo.com web: http://www.aknovapazova.org.rs
March 5 Area Venues.	BMFA 2nd Area. F1H, P30 (Plugge), F1J (Plugge), BMFA 1/2A, CE (Plugge), HLG-CLG Contact: Area Comp Secs.
March 10 Sakylan Pyhajarvi, Finland	Swedish Moose Cup. F1A F1B F1C F1Q. World Cup event. Contact: Per Findahl, Bergvagen 8, 73833 Norberg, 103 96 Stockholm, Sweden, tel: +46 223 22 957, email: per.findahl@gmail.com web: http://www.norbergsfk.se
March 11-12 Säkylä, Finland	Bear Cup. F1A F1B F1C F1Q F1A. World Cup event. Contact: Kim Henriksson, Ymmerstanmäki 9B, 02750 Espoo, 00700 Helsinki, Finland, tel: +35 844 768 8370, email: kim.henriksson@vahanen.com web: http://www.lennokkipojat.fi
March 14-17 Slanic Prahova, Romania	FAI F1D European Championships for Free Flight Indoor Model Aircraft. web: http://www.frmd.ro
March 18 Gjovik, Norway	Holiday on Ice. F1A F1B F1C F1Q. World Cup event. Contact: Tor Bortne, Jernbanev 28, 2840 Reinsvoll, 0179 Oslo, Norway, tel: +47 920 95 329, email: tobortne@bbnett.no web: http://frifluktvegar.no
March 26 Area Venues.	BMFA 3rd Area. Vint' G (Plugge), C/R (Gamage), F1C (Halfax / Plugge), F1Q, HLG-CLG (Plugge). Combined Power. Contact: Area Comp Secs.
April 8-9 Deva, Romania	Harghita Cup. F1A F1B F1C F1P F1Q F1H. World Cup event. Contact: Kiss Istvan, str Berde Mózes 24, 535400 Cristuru Secuiesc, 40404 Bucarest, Romania, tel: +40 74 51 61 435, email: ktamara@netter.ro email2: cc.cristur@gmail.com web: http://www.fai1abc.com
April 8-9 Föhrlberg, Oberkotzau, Germany	Apr 8 - Otto Kuttler Cup, Apr 9 – Fohrlberg Cup. F1E. World Cup event. Contact: Peter Kuttler, Schneebergstr 26, 95145 Oberkotzau, D-38108 Braunschweig, Germany, tel: +49 160 945 16 469 / +49 928 66 187, email: peter-kuttler@web.de

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FAI SPORTING CODE 2017

The new 2017 volumes of the Aeromodelling parts of the FAI Sporting Code have been published. These are available for download from the documents section of the CIAM home page, that is http://www.fai.org/ciam-documents On that page scroll down to and select "Sporting Code Section 4 Aeromodelling". To get the complete rules for free flight you then need the first and third items in the list – CIAM General Rules and F1 Free Flight.

The General Rules volume replaces the previous Volume ABR. It contains most of the contents of ABR but completely renumbered and re-ordered. However, the General Rules section has followed the example of the F1 Volume and the pdf document has a linked contents list, so that you can click on the item in the contents list and go straight to that item. The Record section of ABR is transferred to a new Records volume and some category-specific rules have been transferred to the technical volumes of those categories. In volume F1 these items appear in a new "F1" section at the beginning of the volume

CIAM FREE FLIGHT PROPOSALS

By Ian Kaynes

The following is a summary of the free flight proposals submitted to be considered at the April 2017 Plenary meeting. The official agenda will probably not appear before late February and so this summary gives an advance notice of the contents for immediate discussion. The formal route for comments is to send these to your national CIAM delegate, but please wait and do that after the official agenda has appeared – partly in case there are some differences between my summary and what actually appears in the agenda, but also so that you can quote the exact item number in the agenda.

3.1.3.a Number of flights

1) Canada, Denmark, Netherlands propose to return F1A F1B F1C from 5 flights to 7 flights at World and Continental Championships.

Reasons include:

Flying seven rounds will create a stronger competition, will provide more enjoyment to the sportsmen and will reduce the number of fly-off participants. The competitions are held for the promotion of the sport, participants, and not the organizers.

More flights will reduce the number of fliers in the fly-off. It will also be more satisfying for competitors who may have travelled very long and worked for years to make their national teams, that they are allowed to make seven flights at championships, and not just five.

Preferred by a majority of competition participants. Free flight is presented as a sport and the number of flights has been reduced in the last rule change to reduce the physical effort which contradicts this classification. To reduce the number of fly off participants. To avoid lengthy breaks between the end of the last round and the start of the fly off, which results in timekeeping problems as non fly off participants leave the field and might not return for the fly off

2) FFSC propose: Each competitor is entitled to five or seven official flights. The number to be flown must be -announced in advance in the bulletin.

Reason: For some competitions likely to have good conditions it is appropriate to return to seven flights

Definition of an Unsuccessful Attempt – Duration less than 20 seconds

1) Denmark propose to delete the paragraphs "The duration of the flight is less than 20 seconds" as a reason for a second attempt in F1A, F1B, F1C, F1H, F1J, F1P and F1Q.

Reason: It is possible to dethermalize models with a radio-D/T-system to make a bad start last less than 20 seconds. This is not the intention of the rules, so it should be prohibited.

2) Belgium propose to delete just the F1C rule 3.3.5.c the duration of the flight is less than 20 seconds.

Reason: Deleting the 20 s rule will reward the competitors that fly reliable and thus safer models and will stimulate the construction of such models. In case of maintaining the 20 s rule, competitors might be tempted to use RDT for competitive advantage rather than for maximising safety. For example: In order to stay below the 20 s limit, competitors might be tempted to shorten a bad but safe flight by RDT, possibly resulting in a high-risk landing, too close to the starting line, hurting people and damaging models, cars and others.

3.1.7. Duration of Flights

1) Netherlands propose to change 3.1.7, 3.2.7 and 3.3.7 to have the first and second rounds as being the ones with extended maximum, instead of the first and last round in the current rules.

Reason: The last round is often the round with the strongest thermal activity and wind speeds. A max of 4 minutes contradicts the last sentence in paragraph 3.1.7 which reads "Maximum durations greater than three minutes should only be used for rounds at times when wind and thermal activity are expected to be at a minimum."The second round is often the most difficult as thermals are not yet fully developed . Consequently, a max of 4 minutes in the second round will reduce the number of fly off participants. On average wind speeds are still low in the second round compared to the third to last round

2) FFSC propose to change these paragraphs to specify the extended rounds to be the first round and one other round, in order to give more flexibility of choosing when a second longer maximum is used.

3.1.8 Classification - Flyoffs

3.1.8.a). FFSC propose to reduce the flyoff round period from 10 minutes to 7 minutes. For F1A, F1C and F1P this is a direct reduction. For F1B there is an additional allowance that competitors may wind one rubber motor before the start of the 7 minute period.

Reason: To make the flyoff a greater challenge by giving less time to find good air.

3.1.8.f). Denmark propose to delete the group-flyoff possibility

Reason: The group-flyoff feels unjust and against the spirit of free flight competition.

3.1.8.f). FFSC propose to modify the group flyoff rules:

- Adding the condition that it may be used only when it would be difficult to provide enough timekeepers,
- clarifying item (6) as "If possible an equal number shall go forward from both groups. If one group has fewer competitors with a maximum than the other group, then the number going forward from that group must be increased by including the competitors with the best flights below the maximum time. In order to go forward a competitor's flight time must be at least 75% of the highest time scored in that group."
- adding to (7) a clarification "without the 75% time requirement of (6)."
- adding (9) a clarification about scoring: "Competitors continuing from the group flyoff will be classified by their time in the later single flyoffs. Their times in the group flyoff should be recorded in the results but do not count in

assessing their final placing. There should be two columns of times in the group flyoff results to show which times have been flown in which group.

Reason: to clarify the rules to eliminate the misunderstandings that arose in 2016.

3.3.2. Characteristics of F1C models

Some countries have submitted proposals on motor run and also on changes to the RDT definition. For ease of comparison these are split into the two subject items for this summary. I have hear that there will be a revision to one of the German proposals

Motor run

1) Netherlands and Germany propose two classifications:

a) Models with variable geometry (changes of camber, incidence or area) grade A with maximum duration of motor run 4 seconds

b) Models with fixed geometry (fixed camber and fixed area) grade B with maximum duration of motor run 5 seconds.

Reason: The season 2016 shows clearly that there is a big difference in using a Folder or Flapper with 4 seconds motor run time in comparison to a normal straight model. In more of 90% of fly offs models with variable geometry are wining competitions. Test shows that after climb there is a difference from about 30 m in high and in glide there is a difference from round about 60 to 90 sec or more in dead air.

To compensate the performance difference between categories A and B there should be a difference in model specification and a difference in motor run time. In this way new developments are not blocked, investments keep valued.

The competitor can make his own choice, to take a grade A or grade B model, depending on circumstances. Most important is to avoid that many members of the F1C community will leave the sport; because they feel it is no fun anymore because they have to buy and use a model that is not easy to handle.

Competitors don´t have to use high-tech models which they can´t handle. So it would be more save for everyone if people can fly with models they can handle and have success with them without stress. The sense of free flight is not to be pressed in one direction and to have to use a special type of models.

2) USA propose a split motor run:

Maximum duration of motor run:

4 seconds for models with variable wing geometry
5 seconds for models with fixed wing geometry

Reason: The most recent rule change from a motor run of 5 seconds to 4 seconds has caused the fixed wing models to become immediately obsolete. They were already at a disadvantage due to lower climb height and poorer glide performance, but with a 4 sec engine run, the disparity is more obvious. The sportsmen who fly these simpler models can upgrade (at great expense), but now the barrier to people who want to enter into F1C is much higher. Much of the construction and repair of the simpler models can still be done by individual flyers. However, moving to variable geometry models almost surely necessitates the purchase of 'factory' models from a very few suppliers.

It is important for us to continue to look for ways to keep performance in check and reduce it where possible. However, rendering simpler models obsolete in favour of more complex and expensive models is a step in the wrong direction.

3) Canada propose to change the motor run from 4 seconds back to 5 seconds;

Reason: This proposal is supported by the protest of 137 signatures from 15 countries which was submitted to CIAM in June 2015.

Radio DT

1) From Germany, to be effective from ***1.1.2020:***

Change the requirement that the functions of radio DT from MAY include stop the motor to MUST stop the motor.

Reason: The requirement to have a radio control for dethermalisation was introduced as a safety measure. But with a running engine the actuation of the dethermalisation may destroy the model there will be not increase of the safety. Thus it is necessary, that the radio control includes the possibility to stop the motor. As this might have some impact to the timer (likely an electronic timer to be used), this change should become effective 1.1.2020, only.

2) USA "F1C models **<u>may</u>** be fitted with functional radio control only for irreversible actions to control dethermalisation of the model. This may include stopping the motor…"

Reason: RDT devices fitted to F1C models with mechanical timers can only release the stabilizer after the model has gone to glide. Releasing the DT line prior to glide will have no effect during the "unsafe" part of the flight.

RDT does work on F1C models with electronic timers but there is little RDT can do to increase safety. RDT would normally be used if the model was going off pattern and perhaps diving. Unless the wings are folded, pressing the RDT will often rip the wings off and the fuselage becomes a more dangerous 'spear' type projectile.

3) Canada propose: F1C models **<u>may be</u>** fitted with radio control **<u>but</u>** only for irreversible action to control dethermalization of the model.

Reason: ‚Models equipped with mechanical timers cannot use RC device. The usage of RC device almost always results in breaking the wing of the model in flight and further increases the possibility of harming people. The 2016 Sporting Code does not specify when is required and/or when is mandatory to use the RC device. It represents an unnecessary expense which will result in further loss of competitors in this category.

4) Netherlands propose: F1C models **must use** radio control only for irreversible actions to control dethermalisation of the model. This include**<u>s</u>** stopping the motor if it is still running. Any malfunction or unintended operation of these functions is entirely at the risk of the competitor. **Whenever the electronic timer in the model is activated (e.g. put in non-flight mode or starting position) the competitor must be able to stop the motor and dethermalise the model.**

Reason: Current used electronic timers already have the possibility to be activated by radio even if the starter button is not yet released. Some timers may need a software update. Nowadays most glider flyers use electronic timer including radio control to save their models and avoid dangerous situations. Why should power models, which are more dangerous, not have at least the same possibilities?

F1C for Juniors

Poland propose adding to 3.2 Characteristics with aadditional requirements for Juniors' models:

- Motor exhaust duct(s) connected with a silencer consists of a single, circular and fixed chamber with an outlet diameter 8 mm. The total capacity of the silencer system must exceed 12.5 cm^3. Maximum total length of the system, measured from the motor exhaust duct, including the engine outlet, shall not exceed 150 mm.
- Reducers prohibited.
- Wing with fixed span and constant sprung profile (flaps prohibited).

Reasons: Class F1P does not allow a smooth transition to F1C class (from junior to senior).

Class F1P with its technical rules is an archaic one. Result - a small number of juniors compete in competitions especially in EChs and WChs - 15 juniors F1P only in 2015 Junior WCh. (*Ed: F1C was used for5 Junior World Champs up to 1996 and at the last 3 of those Champs there were fewer than 15 entries)*

During the course of juniors there is no need to build from a scratch or to invest in other models (just remove a muffler or replace an engine and readjust a model) - to increase a number of young players competing,

Reduced engine power and noise more secure to use a junior

F1P 3.6.3 Number of flights

FFSC propose to replace the number of flights paragraph (a) by "See 3.1.3.a."

Reason: To keep the number of flights flown in F1P consistent with F1A F1B and F1C, particularly significant at Junior Championships for F1A F1B F1P

3.4.2 Characteristics of Indoor Models Aircraft F1D

FFSC propose to add new paragraph: "The model shall carry the FAI unique ID number of the competitor on the motorstick written with permanent marker or other non-removable means."

Plus a consequential change: to processing rules. Also to apply to F1L, F1M and F1R.

Also for F1N FFSC propose to add at end of 3.7.2: The model shall carry the FAI unique ID number of the competitor on the upper surface of the wing.

Reason: To provide identification of the model with the competitor and to add a check of the number to the indoor processing requirements. As a new rule it is appropriate to introduce this specifically for the FAI ID number and not include the licence number alternative allowed under the long established rules for outdoor models.

3.Q.2. Characteristics

1) Denmark propose to change the connector type for connecting a Static Energy Test (SET) device. From "3.5 mm male and female bullet connectors and the specification of male positive/female negative" to "XT30 connector"

Reason: Safety. The connector combination as currently required by the F1Q rules may very easily be connected wrongly. For example, it is possible to short-circuit the Lipo-battery (the plus and minus terminals are connected with each other by an error), or - again by an error connect two batteries to each other. Both of these possible errors connections will result in a short circuit of the battery with serious consequences.

Furthermore, the current connector can be error-connect to the SET ("Joule-tester"), so that it has reverse polarity.

XT30 connector will eliminate possible errors – the XT30 connector is "foolproof".

2) Germany propose to reduce the maximum motor run to 30 seconds and energy budget to 3 Joules per gram and increase maximum mass in energy calculation to 600 grams.

Reason: Reduce the model performance and balancing the energy budget between different model designs to avoid that any models will be obsolete under the new requirements.

Balancing the calculation weight will not add more energy for heavier models compared to today. Also for these the reducing to 3 J/g will decrease the absolute energy amount to reduce the performance.

3) Denmark propose to reduce the energy budget to 3 Joules per gram and increase maximum mass in energy calculation to 600 grams.

Reason: Reduction of F1Q model performance.

4) Denmark propose to delete the majority of paragraph b) except for the last sentence (i.e. to enforce energy limiters by deleting the option to have a motor run time) and to change (a) to require "The SET must store and display energy amount used and motor run time."

Reason: Simple, reliable and fair - as well as limiters are now available on the market.

5) Germany also propose to make energy limiters mandatory but also revert to their idea of specifying system architecture with "The energy limiter must interrupt the impulse signal from the timer to the ESC and cuts of the motor(s) when the given energy limit is reached, without need of interaction of other devices. The ESC must always operate via its serial connection to the energy limiter and not with direct connection to the timer. The timer stays independent, but the energy limiter may inform the timer about the end of the energy supply." They also add" The SET must store and display energy **amount used and motor run time"**

Reason: The measurement method of the motor run in models without limiter is very complicate and difficult applicable in practice. As in this case the motor run is not to be timed in flight, the compliance of the correct run time is not possible. A rule which cannot be controlled should not to be used.

Energy limiters are approved devices also in other aeromodelling categories. Reliable limiters which meets the requirements are available on the market and also as an open source project for self-made (for saving costs). The stored data are replicable and verifiable. Limiter can be verified by the CIAM EDIC commission.

The independence from the other electronic control components (timer) is required to avoid manipulations by software.

6) USA propose to add a new item:

Flyoffs: If required, the jury or contest director may reduce the energy budget by 0.5Joules/gram decrements together with 5 second decrements in the maximum motor run for flyoffs as follows:

3.5J/gr with 35 sec maximum motor run

3.0J/gr with 30 sec maximum motor run

2.5J/gr with 25 sec maximum motor run

Reason: The rule proposal *retains* the energy multiplier and the max motor run, but allows their proportional reduction in flyoffs, if the need arises. The reductions are in 12.5% steps, corresponding to 3.5J/gr and 35 second max motor run, 3.0J/gr and 30 sec, 2.5J/g and 25 sec. Reducing the energy and the motor run ceiling by 12.5% steps means that 40-second cruisers will satisfy the 3.5J/gr energy multiplier with a 35 second motor run. Had the max motor run remain pegged at 40 seconds, there is an incentive to develop specialized models for that combination.

F1Q models are processed prior to contest and their energy level or the motor run for models without an energy limiter (EL) is recorded. Because ELs and e-timers are not sealed they can be reset during a contest, a timer or the contest director can ask a competitor to demonstrate the programmed energy level or motor run *prior* to the flight. Since motor run are recorded, albeit inaccurately, it serves as a benchmark when the energy multiplier is reduced in a flyoff. For example, dropping the energy multiplier by 25% should correspond to a similar drop in the motor run relative to the motor runs in the regular flights. Otherwise, the model can be impounded and reprocessed *after* the fact. Of course, motor runs exceeding the max motor run are overruns.

3.Q.8. Classification

Germany propose a reduction of energy in flyoffs by deleting (e) and changing (d):

d) In the event of exceptional meteorological conditions or model recovery problems, the Jury may permit the maximum for a round to be changed that given under 3.Q.8.b. and decrease the maximum energy amount up to 2 J/g AND the motor run time linear up to 20 seconds according to conditions.

Reason**:** To avoid model damages or losses by landing outside of the flying field or difficulties by observation the model by timekeeper it should give the possibility for CD to reduce the model performance for fly off rounds. This can be done very easy by reducing the energy amount and motor time linear. Nor changes for model trim are necessary.

3.Q.9. Timing

Denmark propose to Remove item (c) The motor run will be timed…..

Reason: Section c) is in direct conflict with 3.Q.2 third last paragraph (..”*the motor run will not be timed in flight”*)

Timing

1) Netherlands propose to add a new item to F1.2.1 Timekeepers:

c) In case competing fly-off participants are requested to supply timekeeper(s) for a fly off (see a), these time keepers must be randomly distributed among the competing fly-off participants, e.g. by draw or moving timekeepers to respective neighbouring starting poles.

Reason: To improve time keeping impartiality.

2) Netherlands propose to add a new paragraph F1.2.7 and renumber the following paragraph regarding binoculars:

> In flyoffs, electronic time and altitude recording devices may be used mounted in or on a model. Such devices must be commercially available with an altitude measuring frequency of at least 2 Hz and display equipment like a computer, tablet or smart phone equipped with graphing software must be available to produce a time-altitude graph of the recorded flight. The responsibility of the use and correct functioning of such devices rests with the competitor.
>
> The use of an altimeter is voluntary. Prior to each fly off, participants with (reserve) models equipped with such recording devices being switched on, should position their model(s) at ground level no more than 5 meters from their assigned starting pole. Upon instruction of the contest director, the participant will have to lift the model(s) from the ground and hold the model(s) elevated a number of times, the number and duration of these movements is decided by the contest director thereby generating an unique altitude-time signature. In case of a flight-time related dispute, the competitor automatically may proceed to the following fly off round. Any dispute must be marked on the competitor’s scorecard for that fly off round. After the last fly off but no later than 30 minutes from the end of the last flyoff, the jury will ask the competitor who filed the dispute to read out the altimeter data and present the altitude versus time graph. The jury will check the signature in the graph and determine the flown time for the fly off round for which a dispute has been filed. If the moment of launch, landing and flight time can be clearly established and the correct signature is present, the flight time will be recorded for the final result. If any one of these conditions is not met, the timekeeper’s time of the disputed fly off round will be used as the score for that fly off round. If this time is less than the maximum flight time set for that particular fly off round, any subsequently flown fly off rounds will be cancelled for that competitor. In case of a protest related to the altimeter generated flight time, the altitude graphs must be made available to the jury. Failure to do so will result in the time keeper’s recorded flight time being the official score.

Reason: Make use of electronic possibilities.Recorded flyoff times often suffer from inaccuracies as caused by time-keeper skill, equipment used and/or poor visibility which could result in flight scores which do not reflect the true performance and proper ranking of sportsmen. The use of electronic altimetry can objectively supply the flown time. Timekeepers are however still required as per the current rules.

Some arguments have been raised against this proposal, which I summarize below:

Electronic altimeters are inaccurate: as this may be true for the measured altitude, the time base of these devices is accurate and comparable to electronic stopwatches. The absolute altitude values are not used for measuring the flown time, it is merely the signature in the graph which is used for establishing launch, landing and unique signature which is generated prior to a fly off. These devices can be tampered with and pre stored altimeter graphs can be presented as ‘proof’: the contest director will define a unique signature which will mark the start of a fly off and recorded flight. As the competitor does not know such signature prior to the fly off, he can also not pre record it.

Launch and landing cannot be clearly seen in the graph: launch of F1B and F1C models can, without exception, be clearly established in the graph. Also the launch of an F1A generates a clear and distinct signature in the graph. If the model descends and touches ground, the sink rate will show a marked discontinuity in the graph. If the model does not sink it will keep its altitude or climb and the dethermalisation will generate a distinct signature in the graph. In cases where either the launch (in the unlikely scenario where a model floats off the tow line) or moment of landing cannot be established, the altimeter result will be inconclusive and the timekeeper’s score will be used instead.

Such devices are expensive and complex to operate: a typical altimeter such as the one sold by ‘Hobby King’ costs less then the average entry fee for a World Cup event. They are typically plug and play: apply a lipo battery and they will start recording. Analysis software is freeware and available for Android and Window devices.

Sportsmen are forced to invest in additional equipment: See above as to costs. The use of the altimeter is strictly voluntary. There will always be a timekeeper who will record the flight time.

Models can disappear from timekeeper’s view but the altimeter can continue recording the flight: This is a valid argument, however it is up to the competitor if he wants to take advantage of the real flown time rather than the time the model is or can be visible by the timekeeper. Basically, flying at a site with many downwind obstructions will effectively be similar to flying on a site with no obstructions if altimeter time keeping is used.

3) Netherlands propose to add a new paragraph to the end of 3.A2B.6.: In flyoffs, a dispute can be solved by data as recorded by an electronic altimeter. This dispute must be marked on the scorecard for the disputed flight-time of the flyoff round.

Reason: Addition of disputes and electronic altimeter in relation to new proposal above.

World Cup

Poland propose; that any country may host a maximum of one competition in each class on behalf of another organising country.

Reason: Too many competitions organized in one country. Because of transportation problems in competitions compete competitors from an organizing country only. It distorts the final World Cup results and virtually eliminates cup winning by competitors from other continents.

NEWS FROM BMFA FF TECH COMMITTEE

All correspondence re this news to the FFTC Secretary: Chris Strachan, E-mail: chris.strachan@btinternet.com

The FFTC met at the Leicester office on 30 November 2016.

Free Flight Technical Committee 2017

The 2017 FFTC is comprised of the same people that served at the end of 2016. All were re-elected without need for a vote. Contact details for each person and the role they are responsible for is available on the BMFA FFTC website.

New Flying Site Update

Members of the FFTC, supported by a party of Sam35 and Peterborough MFC flyers, visited Garthorpe point to point Racecourse near Grantham by invite of the Estate and the Tenants to demonstrate what and how we fly. A cold, bright sunny day with an unscheduled hearty wind did not discourage an excellent demonstration. We will now be putting forward a proposal for organised silent flight to The Melton Hunt Club for their consideration. Thanks to Peterborough MFC and SAM 35 for their support in attendance at such short notice. It is hoped that in future some limited performance contests will be possible at this site. Due to the close proximity of residential building it will have to remain a silent site only (electric will be OK).

Rule Changes For 2017

Following a year of deliberations and debate we have agreed a few changes for 2017. We have read every letter, email, heard many opinions and canvassed a good few people to inform our decisions and would like to thank all who positively contributed to the debate. As a committee we have all swayed from pillar to post considering all of the options but have decided on a fairly liberal approach for 2017 responding to the majority.

For 2017 the main changes target flying sites rather than altering the rules and model performance.

In summary this 'centralised' calendar becomes a 'decentralised' calendar for Area Events. The aim is to create more flexibility in where competitors can fly. A simple process is arranged for prospective 'group venues' to be vetted for suitability before being added to the places one can compete at. If you wish to propose a new decentralised venue for these events please contact Phil Ball in writing at least two weeks prior to the date of the event.

New guidance on where Contest Directors should set up the flight line from and fly off time period halved to

5mins. Both designed to maximise the chance of remaining within the confines of the flying site.

To explore further many of the suggestions to address model performance and how to stay within flying sites we will be aiming to run a series of experimental events in 2017.

Contest Calendar

The only changes to the calendar concern F1E events: the first event is on April 23, the third on June 18, the fourth on July 9.

2017 Contest Entry Fees

Centralised	£5	Day ticket covering all classes per day
	£5	Site access charge, day site ticket per day
Area Centralised	£5	Day ticket covering all classes
		Site access charge Set by Area
Season Tickets	£50	Covers all events except Nationals and Area Centralised site access
Team Selection	£25	
Juniors	Free	

Nationals

Airfield Pass	£15 covers 3 days, alternative £10 per day
Daily sports flying pass	£7
1st Class	£11 Championship classes or £6 Non-Championship classes
Subsequent Classes	£11 Championship classes or £6 Non-Championship classes
Unlimited Classes	£50
On field entry	+ 50%

F1E	£4 plus site fees as appropriate
World Cup	£20, ladies and juniors free

Season Ticket

The cost of the 2017 Season Ticket has been set at £50. It represents good value covering entry to all FFTC run events apart from the Nationals and Area Centralised site access fees.

To apply for a season tickets please write to John Carter providing the following:-

- Copy of your BMFA membership card
- Your home postal address and e mail address
- Cheque for £50 made payable to BMFA

John's address is - La Petite Maison, 45 Grindley Lane, Meir Heath, Stoke on Trent, Staffs, ST3 7LN Email – nordicf1a@outlook.com

Prizes at Centralised Events

For 2017 the prizes at Centralised events will be in the form of high street vouchers to a value of £8 rather than bottles of wine as presented in previous years. In line with previous years, the vouchers will only be handed out at the prize giving to the competitor or their representative.

Area Results

Each Area CD must submit their results to Phil Ball by email (preferred) or post to arrive within eight days after the day of the contest. To avoid any misunderstanding please keep a proof of sending to confirm compliance, see rule 2.3.16 (1). Phil would also like to receive a nil return if no scores are recorded.

Schools Rocketry Challenge

You are probably aware that the FFTC includes Space Modelling in its remit. John Jacomb is the Space representative on the committee and always attends FFTC meetings, patiently sitting through hours of debate about free flight models. John is a great ambassador for the BMFA as a whole, not only Rocketry. He is very active in promoting rocketry and wider model flying activities through schools. He is a driving force in promoting the International School Rocketry Challenge (UKAYroc), a high profile event where the International final is held in alternate years at the Paris / Farnborough International Air Shows. In 2016 the final was held at Farnborough with the prizes presented by astronaut Tim Peake and Prince Michael of Kent, it does not get much better than that.

If you have family members or know of any youngsters that may be interested in getting involved the attached flyer may be of interest. I am sure if you would like to discuss this with John he would be only too pleased to give encouragement and advice. John's email is - john@capp-jacombe.freeserve.co.uk

UK Supporters at World Champs

Supporters and helpers are required for the World Champs in Hungary in August. Interested parties should contact Mike Woodhouse as soon as possible:
MichaelWoodhouse1942@gmail.com

OTZMA OPEN, ORIM, ISRAEL, DEC 29

F1A 32 flew 8 full scores

1	E Galor	ISR	960	+420	+233
2	R Altman	ISR	960	+420	+24
3	H Elkayam	ISR	960	+393	
4	Y Yoshvayev (J)	ISR	960	+277	
5	S Isakov	ISR	960	+261	

F1A-Junior 8 flew

1	Y Yoshvayev	ISR	960	+277
2	Y Bichet	ISR	948	
3	T Roizin	ISR	898	

F1B 20 flew 9 full scores

1	O Shabat	ISR	960	+420
1	V Man	ISR	960	+420
3	T Useynov	RUS	960	+348
4	G Batiuk,	GER	960	+319

F1B-Junior 2 flew

1	O Sela	ISR	924

F1C 6 flew 2 full scores

1	S Nagari	ISR	960	+141
2	A Vyazov	RUS	960	+14

F1P-Junior 3 flew

1	I Trapeznikov	RUS	960

HANUKKAH OPEN, ORIM, ISRAEL, DEC 30-31

F1A 38 flew 18 full scores

1	T Roizin (J)	ISR	900	+240	+480	+387
2	A Balasiano	ISR	900	+240	+480	+349
3	A Studnik	ISR	900	+240	+480	+323
4	I Shichman	ISR	900	+240	+480	+277
5	E Galor	ISR	900	+240	+433	

F1A-Junior 12 flew 4 full scores

1	T Roizin	ISR	900	+240	+480	+387
2	Z Reshef	ISR	900	+240	+316	
3	S Brodani	ISR	900	+240	+271	

F1B 24 flew 14 full scores

1	G Herzberg	ISR	960	+360	+229
2	Y Karpel	ISR	960	+360	+223
3	I Vivchar	UKR	960	+360	+222
4	S Kuflik	ISR	960	+360	+217

F1B-Junior 2 flew 1 full scores

1	Y Sarig	ISR	960	+360

F1C 5 flew 4 full scores

1	Y Itzhakov	ISR	960	+360
2	S Nagari	ISR	960	+321

F1P-Junior 2 flew

1	E Klimakova	RUS	924

GRAND COUPE DE BIRMINGHAM 2016, NORTH LUFFENHAM, DEC 4

Report by Stu Darmon

After two very challenging years, the 2016 Birmingham Coupe was very much third time lucky, the weather being bright and chilly with an Easterly breeze which never got above 10 mph or so, and was less for much of the day. Regular CD Kris Best set the first max at 2.00, at which it was to remain all day, with no models reaching the boundary. With nineteen entries in F1G and nine in vintage, flyoffs seemed inevitable. However, flyers soon found the air deceptively treacherous with a pronounced region of turbulence in the middle of the field badly disturbing any flights which were not well away. Defending champion Gavin Manion had his small fast-climbing model dumped to the ground well short of the max, and throughout the day. Some very potent machinery could be seen struggling on the cruise. Phil Ball's model with huge ex -open rubber prop was very impressive, and on his third flight managed to claw its way out of the dreaded turbulence and max, remarkable for such a large aeroplane. These seemingly benign but very tricky conditions made for well-fought and exciting contests, by the end of which not one of the 28 entries had maxed out.

It was noticeable that in general the best vintage coupes were handling the conditions better than the F1G's, possibly because their small, low- camber wings make them slippery despite the fuselage cross-section. Worthy winner of F1G for the second time in three years was Phil Ball, who after being wrong footed on the first flight by the turbulence, stranded up and maxed thereafter. Bill Dennis came second by doing it the other way round with his 1960's 'classic' coupe, while Gavin, having abandoned F1G in disgust after breaking eleven motors to drop two flights, redeemed the honour of the host club by winning the well-supported vintage class with his trusty Etienvre. On de-camping the flight line was enlivened by an exciting demonstration of Ivan Taylor's scale SE5, now diesel powered; clearly Ivan's effigy of Albert Ball is accurate in belligerence as well as looks, because he set about strafing us at low level, clearly having mistaken our models for a *jasta* of Hun monoplanes. The survivors repaired to the warmth of the golf club for the usual convivial prizegiving at which Andrew Boddington once again presented Phil with the AeroModeller trophy, as well as a subscription and prints donated by the new publishers. Gavin lifted the Vintage trophy (which resembles a giant gothic eggcup); While Spencer Willis (who had already left for home) was declared 'man of the match' for combined performance in both classes. Bill Dennis won the prize for top classic ('60's) F1G.

Many thanks to everyone who supported us, particularly Andrew; next year's date-Dec. 3rd- is already provisionally booked. The format seems to work, and will likely be unchanged. However, Gavin hopes to procure a new trophy for the vintage event. The current one was very generously donated at short notice by Gerry Ferrer, who was the last winner of the defunct 100g event for which it used to be presented, but with all due respect, it resembles the proverbial poison chalice, and a suitable permanent replacement is due. Watch this space.

F1G 19 flew * declared 1960s coupe

1	P Ball	577	6	S Philpott	483
2	B Dennis*	529	7	D Thomson	454
3	A Moorhouse	519	8	T Winter	430
4	S Willis	517	9	M McHugh	411
5	W Beales	509	10	R Elliott*	396

Vintage Coupe D'hiver 9 flew

1	G Manion	350	3	C Redrup	306
2	D Taylor	332	4	G Ferer	282

SOUTHERN COUPE LEAGUE

By Peter Hall

Always ahead of the game, the S.C.L. 2017 opened in December '16 with La Grande Coupe de Birmingham, a very successful event with nineteen flying F1G. See Stuart Darmon's report for the details. The fine weather was deceptive, the turbulence upsetting several notable coupe exponents including Gavin Manion, league champion for 2016. The 2017 calendar is now complete except for Odiham where John Thompson is battling to keep the event going. As you see the next event is the First Area on Feb.19th. and as usual the best five out of eight scores will count.

Feb 19	First Area, at Ashdown Forest, North Luffenham, Beaulieu, Merryfield, Salisbury Plain Sculthorpe.
April 30	London Gala at Salisbury Plain.
June 11	Oxford Rally at Portmeadow Oxford.
Aug 19	Southern Gala at Salisbury Plain.
Sept ?	Odiham?
Sept 24	Crookham Gala at Salisbury Plain.
Sept 30	Coupe Europa at Salisbury Plain.

Coupe de Brum maxes score

1	P Ball	3	15	6	S Philpott	1	6
2	B Dennis	1	10	7	T Winter	1	5
3	A Moorhouse	0	8	8	M McHugh	1	4
4	S Willis	2	9	9	R Elliott	1	2
5	W Beales	1	7	10	R Vaughn	1	1

FAI FREE FLIGHT RANKING

Ranking for January 1. Only 2 competitions have contributed to the ranking since the previous positions in November.

The new World Cup points system has now come into effect for competitions in 2017, which increases the points awarded by a factor of 10 (that is 500 points for a win instead of the current 50 points) with bonus points according to the number of people beaten. The ranking was revised for January and then recalculated on the new points system. The part of the points change of points which results from the recalculation is shown in the final column marked *. It is seen that F1C has had a general reduction of scores (bonus points reduced since previous scheme of one point for every 5 beaten). The variation in bonus points has served to resolve 2 ties under the previous system (Makarov/Koglot in F1A and Trachez/Chaussebourg in F1E). The ranking correction factor has been changed by a factor of 10 to keep in step with the placing points change, although this was omitted from the formal rule change.

Full details at www.freeflightnews.org.uk/ranking/latest.htm

		country	pts	place change	pts change	recent result *
F1A						
1	Sergey Makarov	RUS	2599	1	+29	+29
2	Roland Koglot	SLO	2582	-1	-78	+12
3	Mikhail Kosonozhkin	RUS	2495	0	-55	+5
4	Per Findahl	SWE	2398	0	-52	+8
5	Mikhail Kochkarev	RUS	2331	2	+31	+31
6	Allard van Wallene	NED	2223	2	+23	+33
7	Jama Danier	CAN	2186	-2	-224	+6
8	Rudolf Holzleitner	AUT	2082	-2	-228	+42
9	Brian Van Nest	USA	2001	1	+11	-9
10	Borislav Bardarov	BUL	1970	1	+20	OZ16=0-53
F1B						
1	Albert Bulatov	RUS	3267	0	+37	+27
2	Oleg Kulakovsky	UKR	2890	0	-60	+30
3	Stepan Stefanchuk	UKR	2718	1	+38	+18
4	Dag Edvard Larsen	NOR	2682	2	+52	+12
5	Alexander Andriukov	USA	2647	-2	-73	+17
6	Bojan Gostojic	SRB	2526	-1	-114	+6
7	Walt Ghio	USA	2431	0	+41	+31
8	Anatoli Ribchenkov	RUS	2292	0	-58	+2
9	Igor Vivchar	UKR	2258	2	+8	OZ16=0-33
10	Mickael Rigault	FRA	2238	-1	-102	+18
F1C						
1	Artur Kaitchuk	RUS	2992	0	-138	-138
2	Roy Summersby	AUS	2627	0	-123	-43
3	Juri Roots	EST	2606	2	-84	-14
4	Volodymyr Sychov	SLO	2513	-2	-237	-77
5	Yury Perchuk	RUS	2492	-1	-228	-118
6	Artem Babenko	UKR	2449	0	-151	-101
7	Alexandr Vyazov	RUS	2365	0	-185	OZ16=404-3
8	Jerzy Wlodarczyk	POL	2165	2	-145	-5
9	Nikolay Rekhin	RUS	2164	-1	-206	+4
10	Stancho Dobrev	BUL	2067	-1	-103	+17
F1E						
1	Alexander Winker	GER	2822	0	+52	+32
2	Marian Popescu	ROU	2643	0	+53	+3
3	Dominik Andrist	SUI	2238	0	+58	+28
4	Daniel Bildea	ROU	2097	0	+17	+27
5	Frantiszek Kanczok	POL	2052	-1	-28	+32
6	Robert Sifleet	USA	1877	1	+17	+7
7	Jaromir Orel	CZE	1865	-1	-5	+45
8	Andre Trachez	FRA	1736	0	-84	+36
9	Pierre Chaussebourg	FRA	1707	1	+47	+7
10	Jacek Zurowski	POL	1555	-1	-165	+5

FAI FREE FLIGHT WORLD CUP

Final results for 2016 World Cup. Note that the 2016 F1E and F1E-Junior World Cups were completed earlier and the final positions were given in the November 2016 FFn.

The results shown on the following page have been limited to the best 11 events of each competitor.

Key to contests and numbers flying in each class:

			A	AJ	B	BJ	C	Q	PJ
KW	Kiwi Cup NZL	USA	57	1	47	1	15	7	1
NA	North American	USA	55	0	51	0	15	4	0
MM	MaxMen	USA	59	1	56	2	18	6	1
HL	Holiday on Ice	NOR	27	0	14	0	0	2	0
SW	Swedish Moose	FIN	28	2	10	1	1	3	0
BC	Bear Cup	FIN	38	4	18	1	3	2	0
DA	Dave Anderson	AUS	9	0	10	0	5	0	0
EA	Euro & Asia Cup	RUS	73	19	58	14	44	0	12
HG	Harghita Cup	ROU	31	7	14	3	3	0	1
NL	Naloev Cup	RUS	65	14	54	9	41	0	11
AC	Australian FFS	AUS	8	0	14	0	8	0	0
SC	Southern Cross	AUS	6	0	11	0	8	0	0
KS	Kup Slavonije	CRO	54	14	15	1	9	6	0
SL	Salonta Cup	ROU	83	9	48	5	15	6	0
SZ	Szabó Miklós	ROU	88	10	42	4	18	7	0
SM	33rd Srem Cup	SRB	62	13	17	3	11	3	0
IC	Istanbul FF Cup	TUR	13	1	8	1	0	0	0
JT	Jutland Heath Cup	DEN	10	0	5	0	0	2	0
LV	FF Latvia Cup	UKR	11	0	15	0	12	3	0
EL	Elbrus Cup	RUS	43	8	34	5	30	0	9
CU	Caucasus Cup	RUS	43	8	36	7	30	0	8
SE	Swedish Cup	SWE	40	1	29	3	5	14	0
DK	Danish Cup	SWE	27	0	22	0	1	8	0
NO	Norwegian Cup	SWE	42	1	23	3	2	13	0
AN	Antonov Cup	UKR	16	1	20	2	10	0	0
CC	Centennial Cup	USA	6	0	4	1	1	1	0
TU	Tui Cup	USA	3	0	4	1	1	1	0
MS	52nd Mostar Kup	BIH	19	4	5	0	1	3	0
BE	Bat-Erdene's Mem	MGL	17	8	11	0	12	0	0
AS	Asian FF Cup	MGL	17	9	9	0	10	0	0
BD	Budapest Cup	HUN	45	7	29	2	3	7	0
PR	Prilep Cup	MKD	38	22	26	16	3	0	1
PT	Poitou	FRA	53	4	30	2	8	10	0
IK	Izet Kurtalic	BIH	16	2	7	0	4	0	0
DZ	Djordje Zigic	SRB	63	1	51	2	27	0	0
HC	Huron cup	CAN	4	0	5	0	1	0	0
CN	Canada Cup	CAN	4	0	5	0	1	0	0
EF	47th Eifelpokal	GER	50	5	36	2	6	4	0
KZ	Kietrz Cup	POL	66	16	31	6	12	11	2
RB	3rd Raciborz Cup	POL	59	15	24	5	10	10	1
VS	Victor Stamov	UKR	15	2	20	3	12	6	2
KO	Cup of Korea	RUS	17	2	9	2	11	0	2
ZU	Zubr Cup	RUS	37	8	28	9	27	0	5
CB	Commonwealth	RUS	42	9	31	8	33	0	8
AM	Almaty Cup	RUS	12	1	16	1	4	0	0
SF	Sofia Cup	BUL	30	8	12	3	7	0	0
SH	Stonehenge Cup	GBR	19	3	16	1	4	4	0
BU	Bulgaria Cup	BUL	29	8	12	3	6	0	0
HO	Hogo Cup	SVK	32	8	18	1	3	0	0
JM	Jumbo Cup	SVK	26	7	12	1	6	0	1
EQ	Equinox Cup	GBR	17	3	11	1	5	3	0
JI	South Bohemia	CZE	64	7	27	3	10	0	0
KU	Kotuku Cup NZ	USA	14	0	15	0	5	0	0
MC	Macedonia Cup	MKD	35	8	13	3	6	0	0
NK	Niksic Cup	MKD	33	6	14	3	6	0	0
SR	Sierra Cup	USA	8	0	16	0	4	0	0
AL	Anatolian FF Cup	TUR	9	0	6	0	0	0	0
CT	Citta di Capannori	ITA	14	1	11	0	8	3	0
KC	Krka Cup	SLO	47	11	18	2	9	0	0
RH	Philippe Lepage	FRA	47	9	30	0	6	0	0
OZ	Otzma Open	ISR	32	8	20	2	6	0	3
HN	Hanukkah Open	ISR	38	12	24	2	5	0	2

World Cup 2016 F1A

1	Borislav Bardarov	BUL	215	SM-1	KS-1	HG-1	IC-1	NA-7	BU-5	KW-8	HN-7	NK-6	PR-10	DZ-18
2	Jes Nyhegn	DEN	208	SZ-1	DK-1	JT-1	SL-2	RB-4	SM-5	DZ-6	SE-7	KW-12	MM-13	HL-11 NA-16
3	Mikhail Kosonozhkin	RUS	205	EA-1	RH-1	SW-1	HL-2	NL-3	HO-3	EF-4	JM-4	BC-7	OZ-7	SE-14 DK-13
4	Per Findahl	SWE	198	SL-1	HL-1	KW-2	SZ-2	BC-3	SH-3	DZ-4	DK-4	NA-6	PR-5	BD-6 NO-6
5	Roland Koglot	SLO	191	DZ-1	MM-1	NA-2	KW-3	JI-9	KS-23					
6	Ivan Bezak	SVK	184	NA-1	BD-2	HO-2	JM-2	KS-5	MM-7	KW-7	KZ-10			
7	Allard van Wallene	NED	173	PT-1	JI-2	NO-2	SE-4	EF-6	RH-6	DK-6				
8	Phil Mitchell	AUS	170	DA-1	AC-1	SC-1	NA-9	MM-19						
9	Sergey Makarov	RUS	167	MM-2	CU-2	ZU-2	NA-3	KW-4	NL-5	EL-21	CB-16	KO-2		
10	Gerhard Aringer	AUT	162	CT-1	KZ-2	RB-2	RH-8	KC-14	JI-17	SM-20	PR-19			
11	Jama Danier	CAN	162	KW-1	CN-1	HC-2	MM-12							
12	Emmanuel Ragot	FRA	155	SH-1	EQ-1	SZ-7	DZ-9	HL-7	RH-20					
13	Thomas Weimer	GER	150	EF-2	IK-2	NK-3	BU-3	AL-3	IC-4	SF-6	HL-9	MC-18	SZ-24	
14	Brian Van Nest	USA	150	DA-2	SC-2	TU-2	AC-3	SR-3	MM-8	KW-13	NA-14	KU-7		
15	Mikhail Lomov (J)	RUS	150	MC-1	PR-2	NL-4	EA-8	ZU-18	KO-5					
16	Mikhail Kochkarev	RUS	146											
17	Andrew Barron	USA	135											
18	Andrija Pesic	SRB	134											
19	Rudolf Holzleitner	AUT	134											
20	Miroslav Mandichev	BUL	131											
21	Shlomi Rosenzweig	USA	131											
22	Radoje Blagojevic	SRB	130											
23	Jan Vosejpka	CZE	128											
24	Valeri Polyaev	RUS	127											

World Cup 2016 F1B

1	Albert Bulatov	RUS	217	EA-1	NL-1	DZ-1	RB-1	CU-1	EL-5	CB-1	ZU-1			
2	Oleg Kulakovsky	UKR	215	NA-1	SL-1	SZ-1	BD-1	VS-1	LV-1	KZ-8	EF-14	KW-20	MM-23	AN-2
3	Alexander Andriukov	USA	207	KW-1	SR-1	AC-1	SC-1	KU-3	MM-7	NA-13				
4	Stepan Stefanchuk	UKR	205	JI-1	KC-1	HG-1	JM-1	SM-2	LV-2	EF-3	VS-3	BD-4	MM-5	SL-6 HO-5
5	Ismet Yurtseven	TUR	201	SF-1	IC-1	AL-1	MS-1	RH-5	SZ-7	BU-5	KS-8	DZ-20	MM-24	
6	Dag Edvard Larsen	NOR	197	DK-1	HL-1	JT-1	DZ-2	HO-2	JM-2	HG-2	KC-3	RB-4	SL-5	MM-10 SE-8
7	Igor Vivchar	UKR	186	AN-1	HO-1	KZ-2	RB-2	KC-2	RH-3	JI-3	HN-3	JM-3	MM-6	KW-6 DZ-23
8	Anatoliy Rybchenkov	RUS	185	BU-1	EA-2	NL-2	SZ-2	LV-2	SL-3	NA-4	OZ-5	SF-6	HN-9	KW-18 MM-21
9	Walt Ghio	USA	182	MM-1	NO-1	KU-2	NA-3	DK-3	KZ-6	HL-6	RB-7	EF-16	SZ-19	KW-4 SR-4
10	Bojan Gostojic (J)	SRB	179	NK-1	MC-1	SF-2	HG-2	BU-3	SL-8	SM-7	SZ-14	PR-2		
11	Maxim Solodov	RUS	166	BC-1	CU-2	SW-2	ZU-3	NL-16	EL-7	CB-7				
12	Jan Cihak	CZE	162	KZ-1	SL-2	JI-2	SZ-5	HO-6	DZ-17					
13	Adam Krawiec	POL	161	SM-1	KS-1	RB-3	SE-4	DZ-5	DK-5	HG-7	KC-9	JI-13	KZ-15	
14	Roger Morrell	NZL	160	CC-1	DA-2	TU-2	SC-3	EQ-5	AC-6	MM-12				
15	Tony Mathews	CAN	158	HC-1	CN-1	KW-2	MM-15							
16	Bernd Silz	GER	155											
17	Mickael Rigault	FRA	149											
18	Radoje Blagojevic	SRB	142											
19	Ladislav Horak	CAN	135											
20	Evgeny Gorban	UKR	128											
21	Vin Morgan	AUS	126											
22	Bernard Marquois	FRA	124											
23	Timur Useynov	RUS	122											
24	Aleksandr Shelepov	MNE	112											

World Cup 2016 F1C

1	Artur Kaitchuk	RUS	216	EA-1	CU-1	BE-1	SF-1	DZ-2	AS-2	NL-14	EL-11	ZU-3		
2	Volodymyr Sychov	SLO	199	SZ-1	KZ-1	SM-1	SL-2	JI-2	KC-2	BD-2	DZ-3			
3	Roy Summersby	AUS	198	MM-1	NA-1	KW-1	AC-2	DA-2	SC-4					
4	Artem Babenko	UKR	191	DZ-1	AS-1	MM-2	NA-2	KW-2	EA-4	SZ-3	BE-5	SL-7	NL-12	
5	Juri Roots	EST	190	NO-1	DK-1	SW-1	BC-2	JI-3	SE-2					
6	Alexandr Vyazov	RUS	185	PR-1	EA-2	NL-2	OZ-2	DZ-4	CB-6	CU-3	EL-13			
7	Franco Gradi	ITA	174	SL-1	CT-1	RH-2	KC-3	SZ-7	SM-6					
8	Nikolay Rekhin	RUS	168	MC-1	AM-1	NK-2	EA-5	CB-5	EL-5					
9	Jerzy Wlodarczyk	POL	156	HG-1	JM-2	HO-2	RB-4	KZ-5						
10	Stancho Dobrev	BUL	151	BU-1	MC-2	SF-3	NK-3							
11	Edward Burek	POL	149	JM-1	HO-1	KZ-4	SZ-5	SL-5						
12	Alexander Drozdov	RUS	144											
13	Zeljko Grepl	CRO	141											
14	Leonid Chuchukalov	RUS	124											
15	Marek Roman	POL	122											
16	Larissa Savukhina	RUS	118											
17	Oleg Grishkov	UKR	117											
18	Daniel Bogomaz (J)	POL	113											
19	Serhiy Katyba	UKR	112											
20	Neil Allen	GBR	111											

World Cup 2016 F1Q

1	Gabor Milak	HUN	204	KZ-1	BD-1	KS-1	SM-1	SL-2	RB-3					
2	Ian Kaynes	GBR	191	KW-1	EQ-1	HL-1	MM-2	NA-2	SH-2	PT-3	DK-4	SE-6		
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