CIAM PLENARY MEETING, APRIL14-16

Report by Ian Kaynes

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

A CIAM Bureau meeting was held on April 14. The Free Flight Technical Meeting (FFTM) which I chaired as chairman of the Free Flight Subcommittee (FFSC) was conducted on April 15th, together with some Plenary business and presentation to World Cup winners The main Plenary meeting (at which the binding decisions are made according to the votes of national delegates) was on April 16th.

The FFTM was attended by:

Mehmed Arslau	Turkey
George Batiuk	USA
Martin Dilly	New Zealand
Suart Esmer	Turkey
Cesare Gianni	Italy
Trevor Grey	UK
Ivan Horejsi	Czech Republic
Jack Humphreys	Canada
Wilhelm Kamp	Austria
Ian Kaynes	UK
Srdjan Pelagic	Serbia
Sandy Pimenoff	Finland
Andras Ree	Hungary
Paul Seren	Germany
Jari Valo	Finland
Gerhard Wobbeking	Germany
Mihail Zanciu	Romania

F1Q

The major technical rule change proposals concerned the electric class F1Q. Denmark, Germany and USA all proposed changing the rules to restrict performance by imposing energy limits. These require an energy limiter to be fitted on the aircraft, with the USA proposal including an alternative option of measuring power before launch and calculating a motor run time to give the required energy usage.

The intent of the proposals were to reduce the performance of F1Q models from the very high level shown by German N Finnish flyers. Matti Lihtamo, 2010 World Cup winner, has an F1Q which climbs to 150m in 4 seconds, and then glides for over 6 minutes. The current limitation of battery weight does not provide a clear enough performance limit, particularly while battery technology has been progressing. To reduce the limit further would have resulted in battery overload and over-heating. On the other hand some flyers, especially in UK and USA, considered that no limitation was necessary and that the addition of expensive electronic limiters would discourage participation.

Within the energy limiter proposals the questions arose included:

a) How to process and check the energy limiter settings and use when making contest flights

b) The procedure for flyoffs – subject to the previous point it would be very complex to administer different energy limits for each flyoff round.

c) If an alternative means of energy limiting could be allowed via motor run timing

d) The details of the amount of energy allowed. All proposals called for energy related to the weight of the model (actual values proposed were 4, 4.5 and 5 Joules per gram). The question that arises is whether a direct link of energy to weight will drive models to the largest size – like the F1C rules that have mass linked to motor capacity, but everybody flies with the maximum of 2.5cc, never using smaller motors.

In the technical meeting Paul Seren demonstrated the use of an Unilog energy limiter on his bench system of an electric power system. He showed how an interface module could be plugged in to show or to change the energy limit settings. A duplicate system could be plugged in to allow comparison between limiters to confirm accuracy.

On the issue of the actual energy value, Trevor Grey suggested a slightly higher than value, such as 5.5 Joules/gram. However, the meeting did not see the need to go outside the range of the proposals but readily agreed to the highest proposed limit of 5 Joules per gram. The German proposal included an upper limit at 600g and the Danish proposal no limit. USA had no limit on the direct energy limiting option but the form via motor run timing had constant energy for motor runs less than 4 sec or more than 15 sec. These constant energy options gave advantages to light low powered models and also to heavy high powered models. After discussion Germany agreed to reduce their limit to 550g and this was adopted (i.e models heavier than 550g have their energy capped at the value for 550g).

Some people might find it useful if I give a reminder of energy units: the Joule is the metric measurement of energy and corresponds to a power of 1 Watt exerted for one second. Electrically, one Watt is a current of one Amp with a potential of one Volt. In mechanical terms one Watt is moving a distance of one metre against a force of one Newton –this means raising

a mass of 100g by a height of just over one metre. Thus the energy limit of 5 Joules per gram gives energy which would raise the model to 500 metres, assuming perfect efficiency.

For an alternative implementation of energy limiting, there was initial discussion of a motor run calculation based on the stated characteristics of the battery (number of cells and the nominal capacity and maximum discharge rate). After discussion it was agreed that it would be more accurate to measure the actual power rather than estimate it from stated battery characteristics and so part of the US proposal was incorporated into the German proposal. This requires measuring the energy with a Wattmeter with the motor running from a fully charged battery and then calculating the motor run which gives the specified amount of energy.

There was enough doubt about how practical it would be to monitor energy limiter settings on the field without introducing the further complication of reducing energy for each flyoff round. The technical meeting decided to maintain the same energy settings for all flights and conduct the F1Q flyoffs by the same F1ABC process of increasing the max by two minutes for each flyoff round.

The Technical meeting and then Plenary meeting were both unanimous in accepting the modified proposal.

The full statement of the F1Q characteristics is now:

3.Q.2 Characteristics

The battery pack will power the motor(s) as well as the controller(s) if they are used.

Lithium type battery packs must be in as manufactured condition, with the covering around the single cell(s). If more than one cell is used a balancer connector must be fitted.

External Battery packs are required to have a safety tether to the fuselage.

Safety locks must be used to prevent unintentional restarting of motor(s) after motor(s) have been stopped.

Rule B.3.1. of Section 4b does not apply to class (No builder of the model requirement.)

The motor run time will be determined by a maximum energy amount. In addition, motor runs over 20 seconds are regarded as overruns. The energy budget of each model is 5 joules per gram of the total weight. For energy calculations, weight exceeding 550 grams is to be ignored. Energy limitation will be by an energy limiter or by a motor run limit related to measured power.

a) For models with energy limiters. The allowed energy amount starts to be calculated with the launch of the model. If the energy limiter doesn't has the capability detecting the launching moment it may start its calculation from the beginning of the motor run. The measuring device has to calculate the energy consumed in real time. After coming to the end of the limited energy supply, the motor(s) must stop irreversibly. The timer stays independent, but the device may inform the timer about the end of the energy supply.

b) For models without energy limiters the motor's energy in watt-sec over the motor run is calculated as the average wattage over the motor run multiplied by the motor run, using a freshly charged battery (4.15 to 4.2 volts per Li cell, 1.2 volts per NiCad or NMH cells). Average wattage is calculated by measuring the initial wattage as the motor is powered with a commercial wattmeter via 3.5 mm male and female bullet connectors furnished by the contestant.

F1Q models may use radio control only for irreversible actions to terminate the flight (dethermalisation). This may include stopping the motor if it is still running. Any malfunction or unintended operation of these functions is entirely at the risk of the competitor.

The number of models eligible for entry by each competitor is four.

3.Q.8 Classification

a) The total time for each competitor for each of the official flights defined in 3.Q.3. is taken for the final classification.

b) In order to decide the individual placings when there is a tie, additional flights shall be made after the last flight of the event has been completed. The maximum time of flight for the first of the deciding flights shall be five minutes and the maximum time of flight shall be increased by two minutes for each subsequent flight.

c) The organiser will establish a 10 minute period during which all fly-off competitors must release their model. Within these 10 minutes the competitors will have the right to a second attempt in the case of an unsuccessful first attempt for an additional flight according to paragraph 3.Q.5. Starting positions will be decided by draw for each fly-off.

d) In the event of exceptional meteorological conditions or model recovery problems, the Jury may permit the maximum for a round to be changed. Such a modified maximum must be announced before the start of the round.

e) The energy and motor run limits remain as defined in 3.Q.2

World Cup rules

Canada had proposed increasing the number of World Cup events from 2 to 3 for all countries outside Europe.

It should be remembered that for World Cup classification the total of three results are counted. A competitor can score only one event organised by a European country but with no limit for countries outside Europe. A complication of the Canada

proposal was that it would mean a competitor could make his entire three-event total from events in a single country outside Europe. This generated some opposition to the proposal.

A further complication with World Cup is the extension of organisers running events in other countries. Presently their is no limit on this but the majority of the FFSC had supported a limit on counting events according to the country they were flown in (this had not gone forward as a proposal to CIAM because it happened too late for the submission date). This existing limitation was adapted to fit within the Canadian proposal and thus provide some limitation on winning a World Cup in a single country. The modified proposal was accepted unanimously by the FFTM and the Plenary meeting. The two modified paragraphs in the World Cup rules are:

3. Contests

A maximum of two contests may be selected for any European country. A maximum of three contests may be selected for countries outside Europe. A country may choose to fly a World Cup event at a flying site in another country. For the purpose of counting events and classification (paragraph 5(a)) this event will be regarded as an event by the organising country, provided that the name of this country is included in the title of the event and the organiser contact address, telephone and fax numbers are in the organising country.

5. Classification

The World Cup results are determined by considering the total number of points obtained by each competitor in the World Cup events. Each competitor may count the result of all competitions, except that

a) only one competition may be counted from each organising country in Europe (taking the better score for any European country in which he has scored in two competitions).

b) a maximum of two competitions can be counted from events flown in the same country (according to the venue of the competition, irrespective of the organising country). The best two scores are taken if a competitor has scored in more than two events in one country

To determine the total score, up to three events may be counted, selecting each competitor's best results during the year.

Free flight definition

There were two proposals from the FFSC to change the definition of free flight in paragraph 1.3.1 in volume ABR. These were agreed by the FFTM and passed in the Plenary meeting.

The first was to extend the closed loop control definition to include moving mass as well as aerodynamic control.

The second was to remove the possibility of discus-style launching by one wing tip for general free flight models. Such launching can give potential performance benefits at the possible cost of some safety and complexity.

The modified free flight definition is now:

> This is a flight during which there exists no physical connection between the model aircraft and the competitor or his helper. Radio control functions are allowed only when specifically stated in the rules for the relevant class. Closed loop control systems with active sensors and operating aerodynamic flight controls **or moving ass** are not allowed, except for steering in F1E. **Unless specifically stated in the rules for a class, free flight models must be launched with at least one hand holding the fuselage of the model**

F1N, indoor hand launch glider, which already uses wing tip launching has this use confirmed by adding the following sentence to the launch definition 3.N.8:

> The requirement in 1.3.1 of section 4c that models be launched with one hand holding the fuselage does not apply to F1N.

Other proposals

The FFSC proposal to renumber the Sporting Code technical volumes with paragraph numbering starting with the class letters was withdrawn after discussion in the Bureau meeting, when a reorganisation of the volumes was being considered.

Finland had proposed a change to the F1D steering rules. This would have limited the amount of movement that could be made while steering, possibly making it very difficult to get models away from the wall when drift was present. As such the FFTM thought it was a rule change rather than a "clarification" and a rule change is not allowed in F1D this year. It was referred to FFSC to consider during the year.

The following FFSC proposals were accepted by FFTM and the Plenary meeting:

1) A modification to the definition of number of flights to specify that the official flight and all attempts and repeated attempts must be launched during the official round. For rubber classes it is added that winding must take place during the round (like the current flyoff rules when winding is specified to be within the round). This change is included in para 3.1.3 for F1A, 3.2.3 for F1B and so on for all the outdoor classes.

2) A change to the RDT rule for F1C and F1Q so that RDT may be used only for terminating the flight (not in place of a regular time to stop the motor and then continue flying). The text is included in the F1Q rule 3.Q.2 above.

Championships News

The venues for 2012 FF Championships were selected at the Plenary meeting last year. As a reminder the 2012 venues are:

Junior World Champs F1ABP	Slovenia
Indoor World Champs	Serbia
Euro Champs F1ABC	Italy
Euro Champs F1E	Romania

The 2013 events were awarded at the Plenary meeting this year. Bids for the F1ABC World Champs had been submitted by Croatia, France, Slovenia, and Turkey. Croatia were not represented at Plenary and provided no details so that option was eliminated. The other bidders described their plans, with Slovenia emphasising that they had never had an FAI Championship (keeping quiet about the one already awarded for 2012). Turkey emphasised that it would be on the same field as the 2010 Euro Champs although run by a different organisation. France's bid would be run by the Moncontour club and they had organised the 2004 Junior World Champs, and noted that it will be 26 years since their last ABC World Champs, in comparison with the other bidders. The voting showed a clear majority for France with 25 against 5 each for Turkey and Slovenia.

The F1E World Champs was between Romania and Slovakia. The vote was won by a large majority in favour of Slovakia, with 24 votes against 9 for Romania.

The 2013 Junior Euro Champs F1ABP had bids from Bulgaria and Romania. Remarkably the first vote was a tie with 14 votes each. The second vote gave the honour to Bulgaria by 12 to 11.

There was only one offer for the Indoor Euro Champs – not surprisingly from the one established current site in Serbia. The offer was accepted by the Plenary.