Fédération Aéronautique Internationale

Agenda

of the Plenary Meeting of the FAI Aeromodelling Commission

To be held in Lausanne, Switzerland on 5 & 6 April 2019

Issue 1

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AGENDA
CIAM PLENARY MEETING 2018

to be held in Lausanne (Switzerland)
on Friday 5 April and Saturday 6 April 2019, at 09:15

1. PLENARY MEETING SCHEDULE AND TECHNICAL MEETINGS

According to the rules, and after confirmation at the 2018 CIAM December Bureau Meeting by the relevant Subcommittee Chairmen, the following scheduled Technical Meetings will be held: F1, F3A, F3BK, F3C, F3D, F9, and Education. Interim Meetings will be held for F5 Electrics and F4 Scale.

The Technical Meetings will take place in the meeting rooms and in the Plenary room, and other venues that may be available to the CIAM.

2. DECLARATION OF CONFLICTS OF INTEREST (ANNEX 1a)

Declarations, according to the FAI Code of Ethics will be received.

3. PRESENTATION IN MEMORIAM

4. MINUTES OF THE APRIL 2018 BUREAU & PLENARY MEETINGS, AND OF THE DECEMBER 2018 BUREAU MEETING

4.1. **2018 April Bureau**
- 4.1.1. Corrections
- 4.1.2. Approval
- 4.1.3. Matters Arising

4.2. **2018 Plenary**
- 4.2.1. Corrections
- 4.2.2. Approval
- 4.2.3. Matters Arising.

4.3. **2018 December Bureau**
- 4.3.1. Corrections
- 4.3.2. Approval
- 4.3.3. Matters Arising

5. APRIL 2019 BUREAU MEETING DECISIONS

Distribution and comments of the April 2019 Bureau Meeting decisions.

6. NOMINATION OF BUREAU OFFICERS AND SUBCOMMITTEE CHAIRMEN (ANNEX 1b)

6.1. **Subcommittee Chairmen to be elected**

F1 Free Flight
F3 RC Aerobatics
F3 RC Soaring
F3 RC Helicopter
F3 RC Pylon Racing

Note. The nomination form will be distributed together with the agenda. The Delegate or the Alternate Delegate will have to complete the form (Annex 1b) in advance and submit it, preferably during the registration period, and before leaving the auditorium for the various Technical Meetings.

6.2. **Subcommittee Chairmen to be confirmed**

F2 Control Line
F9 Drone Sport
F4 RC Scale
F5 RC Electric
F7 RC Aerostats
S Space Models
Education

7. REPORTS

7.1. **2018 FAI General Conference, by the FAI**

7.2. **CIAM Bureau report on its activity since the last Plenary, by CIAM President, Antonis Papadopoulos**

- ASC Presidents meetings June and October 2018
- CASI meeting October 2018
- Bureau activities

7.3. **2018 FAI World and Continental Championships, Jury Chairmen (ANNEX 2)**

7.3.1. 2018 FAI F1 Juniors World Championship for Free Flight Model Aircraft. Bulgaria. Ian Kaynes

7.3.2. 2018 FAI F1D World Championship for Free Flight Indoor Model Aircraft. USA. Andras Ree

7.3.3. 2018 FAI F2 World Championships for Control Line Model Aircraft. France. Massimo Semoli

7.3.4. 2018 FAI F3F World Championship for Model Gliders. Germany. Antonis Papadopoulos

7.3.5. 2018 FAI F3J World Championship for Model Gliders. Romania. Tomas Bartovsky

7.3.6. 2018 FAI World Drone Racing Championships. China. Bruno Delor

7.3.7. 2018 FAI F4CH World Championship for Scale Model Aircraft. Switzerland. Johan Ehlers

7.3.8. 2018 FAI F5BD World Championship for Electric Model Aircraft. Japan. Emil Giezendanner

7.3.9. 2018 FAI S World Championships for Space Models. Poland. Narve Jensen

7.3.10. 2018 FAI F1 Seniors European Championship for Free Flight Model Aircraft. Hungary. Pierre Chaussebourg

7.3.11. 2018 FAI F1E European Championship for Free Flight Model Aircraft. Slovakia. Andras Ree

7.3.12. 2018 FAI F3A European Championships for Aerobatic Model Aircraft. Belgium. Peter Uhlig

7.3.13. 2018 FAI F3K European Championships for Model Gliders. Slovakia. Tomas Bartovsky

7.3.14. 2018 FAI F5J European Championship for Electric Model Aircraft. Bulgaria. Emil Giezendanner

7.4. **2018 Sporting Code Section 4: CIAM Technical Secretary, Mr Kevin Dodd (ANNEX 3)**

7.5. **2018 Subcommittee Chairmen (ANNEX 3)**

- 7.5.1. Free Flight: Ian Kaynes
- 7.5.2. Control Line: Ferenc Orvos
- 7.5.3. RC Aerobatics: Peter Uhlig
- 7.5.4. RC Gliders: Tomas Bartovsky
- 7.5.5. RC Helicopters: Stefan Wolf
- 7.5.6. RC Pylon: Rob Metkemeijer
- 7.5.7. RC FPV: Bruno Delor
- 7.5.8. RC Scale: Pal Linden Anthonisen
- 7.5.9. RC Electric: Emil Giezendanner
- 7.5.10. Aerostats: Johannes Eissing
- 7.5.11. Space Models: Zoran Pelagic
- 7.5.12. Education: Per Findahl

7.6. **2018 World Cups, by World Cup Coordinators (ANNEX 4)**

- 7.6.1. Free Flight World Cup: Ian Kaynes
- 7.6.2. Control Line World Cup: Jo Halman
- 7.6.3. RC Aerobatics World Cup: Rob Romijn
- 7.6.4. Thermal Soaring and Duration Gliders World Cup: Martin Weberschock
- 7.6.5. RC Helicopter World Cup: Ian Emery
- 7.6.6. RC Slope Soaring World Cup: Erik Schufmann
- 7.6.7. RC Thermal Duration Gliders World Cup: Sotir Lazarkov
- 7.6.8. RC Hand Launch Gliders World Cup: Friedman Richter
- 7.6.9. RC Large Aerobatics World Cup: Pascal Rousseau
- 7.6.10. RC Indoor Aerobatics World Cup: Michal Gryglas
- 7.6.11. RC Multi-rotor FPV Racing World Cup: Bruno Delor
- 7.6.12. RC Electric Powered Thermal Duration Gliders World Cup: Sotir Lazarkov
- 7.6.13. Space Models World Cup: Zoran Pelagic

7.7. **2018 Trophy Report, by CIAM Secretary, Massimo Semoli (ANNEX 5)**

7.8. **Aeromodelling Fund- Budget 2019, by the Treasurer, Andras Ree (ANNEX 3)**

7.9. **CIAM Flyer, by the Editor, Emil Giezendanner (ANNEX 3)**

7.10. **EDIC WG report, by Chairman, Paul Newell (ANNEX 3)**

8. FAI WORLD AIR GAMES 2022

9. PRESENTATION OF 2018 FAI WORLD CHAMPIONSHIPS MEDALS COUNT PER NATION

10. PRESENTATION OF 2018 WORLD CUP AWARDS CEREMONY

INVITATION TO THE PRESENTATION CEREMONY FOR

The 2018 World Cup awards for classes F1A, F1A junior, F1B, F1B junior, F1C, F1E, F1E junior, F1P junior, F1Q, F2A, F2B, F2C, F2D, jF2A, jF2B, jF2C, jF2D, F3A, F3B, F3F, F3K, F3J, F3CN, F3M, F3P, F9U, F5J, S4A, S6A, S7, S8E/P and S9A

will be held on Friday, 5 April 2019, at 16.30.

11. PLENARY MEETING VOTING PROCEDURE

Confirmation of the voting procedure for the Plenary Meeting.

12. SCHOLARSHIP SELECTION APPROVAL (ANNEX 8)

- Bojan GOSTOJIC (Serbia)
- Dillon GRAVES (USA)
- Aaron COLE (GBR)
- Wojcich KOSZELSKI (Poland)
- Michal ZITNAN (Slovak Republic)

13. NOMINATIONS FOR FAI-CIAM AWARDS (ANNEX 6)

Alphonse Penaud Diploma

- Matthew HOYLAND (GBR)
- Robin TRUMPP (Germany)
- Dimche VELKOVSKI (FYR Macedonia)

Andrei Tupolev Diploma

- No Candidates

Antonov Diploma

- No candidates

Frank Ehling Diploma

- Bemowo Culture Center - Aeromodelclub (Poland)

Andrei Tupolev Medal

- Brett SANBORN (USA)
- Michal ZITNAN (Slovak Republic)

FAI Aeromodelling Gold Medal

- Peter GERMANN (Switzerland)
- Ingemar LARSSON (Sweden)
- Jan MAIXNER (Slovak Republic)
- Peter UHLIG (Germany)
- Bogdan WIERZBA (Poland)

14. OPEN FORUM

The subject will be “IT solutions available for the members”

You will receive additional information regarding the Open Forum Session as soon as it is available**.**

15. SPORTING CODE PROPOSALS

The Sporting Code proposals begin overleaf.

15. SPORTING CODE PROPOSALS

The Agenda contains all the proposals received by the FAI Office according to the manner required in rule A.10.

Additions in proposals are shown as **bold, underlined**, deletions as ~~strikethrough~~ and instructions as *italic*.

Bureau proposals appear in the appropriate rule section of item 15.

Each section begins on a new page.

15.1 Volume CIAM General Rules, Section 4A
(CIAM Internal Regulations)

a) A.7.1 Election of Subcommittee Chairmen **United Kingdom**

Add new text as follows:

The CIAM elects by secret ballot the Chairman of each Subcommittee for a period of two years, with a compulsory confirmation after one year.

Nominations for the post of Subcommittee Chairman must be with FAI by 15th November of the year prior to the Plenary Meeting at which the election will take place. The nomination must be signed by the nominee, and must be accompanied by a CV of the nominee.

The nominated Chairman must be on the Technical Experts list at the time of his nomination.

The election shall occur at the Plenary Meeting during the year in which a Subcommittee may have a regularly scheduled Meeting for decision purposes and in which a World Championship for the subject category is held. For F1, the election year is the year in which the F1ABC Senior World Championships take place and for F3 Soaring it is the year in which the F3B World Championship takes place.

Reason: This amendment would allow all those interested in a particular category to know who has been nominated as a Subcommittee Chairman. The NACs/Federations would then be able to instruct their Delegates who to vote for.

As the elected Subcommittee Chairman will be a member of the Subcommittee then it follows that he must be on the list of Technical Experts at the time of his nomination.

Volume CIAM General Rules, Section 4B begins overleaf

15.2 Volume CIAM General Rules, Section 4B
(General Specifications for CIAM Classes)

Volume CIAM General Rules, Section 4C begins overleaf

15.3 Volume CIAM General Rules, Section 4C
(General Rules for International Events)

a) C.5.3 National Team for World & Continental Championships United Kingdom

Amend paragraph (b) as follows:

a) A national team …..

b) For those categories that do not have separate junior championships, the team may consist of a maximum of four individual competitors or four pairs of competitors for each category provided that the fourth competitor is a junior, plus a team manager. **For F2 classes the team may consist of a maximum of five individual competitors or five pairs of competitors for each category provided that the fourth and fifth competitors are juniors and that one of those juniors is no older than 15 years of age in the year of the championship, plus a team manager.**

Reason: From the 1st January 2019, the junior age for F2 will now be 21 years. While this will help to encourage juniors to reach their potential before they join the senior ranks, it could disadvantage very young competitors. Introducing two junior age groups will enable younger competitors to gain the necessary experience for them to move through the junior ranks and, in due course, on to the senior ranks.

Technical Secretary Note: Consequential changes required to C.15.2.1; C.15.6.2; C.15.3 – see item (b).

b) Consequential changes required for Item a) United Kingdom

C.15.2.1 Class F (Model Aircraft) - Odd & Even years lists.

F2ABCD (Senior + 4th **and 5th** junior member**s**)

C.15.6.2 National Team Classification

a) The national team classification for all CIAM classes for World or Continental Championships is established after the completion of the championship using one of the following two methods only:

i) By adding together the numerical final placings of the three national team members using the full list of competitors unless there is a fourth **or a fifth** member of the team (who must always be ~~a~~ junior**s**) in which case it will be the three best placed members.

Teams are ranked from the lowest numerical places to the highest, with complete three competitor teams, ahead of two competitor teams, which in turn are ranked ahead of one competitor teams. In the case of a national team tie, the best individual placing decides.

or

ii) By adding the scores of the three members of the team together unless there is a fourth **or fifth** member of the team (who must always be ~~a~~ junior**s**) in which case it will be the three best scoring members.

In the case of a national team tie, the team with the lower sum of place numbers, given in order from the top, wins. If still equal, the best individual placing decides

For F2C, in either method of national team classification a "member" is a two-competitor team.

b) For World ……

c) When teams consist of four **or five** competitors or, in the case of F2C, four **or five** pairs of competitors (see C.5.3) then all the team members in first, second and third place will be awarded medals and shall be entitled to be on the podium.

d) In each ……

e) If there ……

C.15.6.3 Overall classification in multiple contest categories

a) In a World or Continental Championships with more than one category a classification may be made of the overall performance of the competing nations. This is established by taking the total scores of the three members of the teams or, in a four **or five** member team ie one containing ~~a~~ **one or two** junior**s**, the three best scoring members in all of the contest categories.

b) The highest ……

c) If there is a …….

d) There are ……

c) C.5.3 National Team for World & Continental Championships France

Replace paragraph b) and insert new paragraph d) as shown below, renumbering the existing paragraph d) and e) as a consequence:

b) ~~For those categories that do not have separate junior championships, the team may consist of a maximum of four individual competitors or four pairs of competitors for each category provided that the fourth competitor is a junior, plus a team manager.~~

b) The team may be extended to five individual competitors provided at least one competitor is a junior and another one is a woman. The possibility of an additional junior competitor only applies to classes that do not have separate junior championships.

d) The reigning Woman World or Woman Continental Champion has the right (subject to the approval of her National Airsports Control) to participate in the next World or Continental Championships in that category regardless of whether she qualifies for the national team or not. If she is not a

member of the national team, her score will not be considered in the team results.

Reason: Encourage participation of women in aeromodelling contests.

d) C.5.3 National Team for World & Continental Championships Finland

Amend the paragraphs a) and b) as follows:

a) A national team ~~shall~~ **may consist of a maximum of 5 individual competitors or 5 pairs of competitors for each category, providing that at least one competitor (or pair) is a Female and at least one is a Junior,** and a Team Manager**.**

b) ~~For those categories that do not have separate junior championships, the team may consist of a maximum of four individual competitors or four pairs of competitors for each category, provided that the fourth competitor is a junior, plus a team manager.~~ **For those categories that have separate Junior World and Continental Championships, the national team may consist of a maximum of 4 competitors (or pairs), providing at least one competitor (or pair) is a Female Junior,** and a Team Manager.

All Females and Juniors will compete for the overall individual classification. Additionally, there is a Female classification and a Junior classification, both with FAI medals and diplomas.

Reason: We have for too long ignored female interest and energy. Ladies are successful in many aviation sports. Greater gender diversity will strengthen our sport and vitalise our activities in many ways.

e) C.7.6 Judges' qualifications and selection of judges for contests Italy

C.7.6. is a new paragraph:

The National Aero Club (NAC) of each country having judges who join (or who wish to join) judging panels at international contests should ensure that a defined standard of judging proficiency including English speaking and understanding level is reached and maintained by each of the judges for which it has responsibility.

Each such NAC should therefore:

a) Arrange suitable means and procedures to ensure that each judge is fully trained. This means arranging training courses which include regular and repeated group training in both theoretical (classroom) and practical (flight) venues where every aspect of both the current Sporting Code and Judges' Guide may be examined and practised in detail.

b) Provide suitable means for officially recording each such training session attended by every judge within its national responsibility. Such official record should include dates, duration, and number of flights observed at such training sessions, and should also separately list details of all the national and international contests at which each judge has been a member of the judging panel.

c) Establish selection criteria which clearly define the minimum periods of undergoing such training and of actually judging high quality flights at national level before prospective judges are eligible to be nominated or invited to join judging panels at international contests.

Providing all the above will ensure that the judging of all international contests is carried out to the same basic standard.

These measures will also enable the organisers of international contests to be sure that all judges invited or nominated to a judging panel do indeed meet the required standards of qualification and experience.

The organisers of all World and Continental Championships should therefore submit a list of proposed judges' names, together with their NAC qualification details as at paragraph b) above, to their own NAC and to the Subcommittee of the CIAM.

To ensure a continuous pool of suitably qualified international judges it is also recommended that, with suitable modifications, each NAC apply the criteria and procedures at the above paragraphs a) through c) inclusive to the selection and training of judges for contests at national level.

Reason: It is important that contest organiser of World, Continental and World Cup contests may rely on highly professional judges from the Judge list, based on a standard level provided by all Federated NACs.

f) C.13.6 Woman classification in an Open International France

Add the following new paragraph as C.13.6 and consequentially renumber the following paragraphs to C.13.7 and C.13.8.

C.13.6 Woman classification in an Open International

If there are three or more women entries in an Open International, there must be a separate Woman classification included in the results.

Reason: Encourage participation of women in aeromodelling contests.

g) C.15.3 Offers to host a World or Continental Championship United Kingdom

Add a new paragraph c) as follows and re-number the subsequent existing paragraphs:

a) It is the CIAM's responsibility to decide and award World and Continental Championships and to decide which NAC shall be delegated with the responsibility for the organisation of the championship.

b) The awarding of a championship will normally be made by vote of the Plenary Meeting two years in advance of the year of the proposed championship.

c) When voting on awarding a Continental Championship, only Delegates from countries in that Continental geographical area are permitted to vote.

Reason: For the awarding of Continental Championships it is important that only those countries in the appropriate geographical area are permitted to vote so that

the awarding of the championship is not distorted by Delegates from countries that are not entitled to participate in the Championships.

Only the views of those countries who are entitled to send teams to a particular Continental Championship/s should be taken into account when awarding Continental Championships.

h) C.15.6.1 Individual classification **France**

Add a new paragraph c). Renumber the following paragraph d), as a consequence.

c) For any World or a Continental Championship, all women are considered for the following awards:

- FAI medals and diplomas will be awarded to the first, second and third placed women. If only one or two women compete in the class, they shall be also awarded an FAI medal and diploma.

- The best woman earns the title of Woman World or Continental Champion if women from at least four different nations participate in that class.

Reason: Encourage participation of women in aeromodelling contests.

i) C.15.6.2 National team classification **France**

Amend the paragraphs as shown as a consequence of items c), f) and h):

a) The national team classification for all CIAM classes for World or Continental Championships is established after the completion of the championship using one of the following two methods only:

i) By adding together the numerical final placings of the three **best placed** ~~national team~~ members **of the national team** using the full list of competitors ~~unless there is a fourth member of the team (who must always be a junior) in which case it will be the three best placed members~~.

Teams are ranked from the lowest numerical places to the highest, with ~~complete~~ three competitor teams, ahead of two competitor teams, which in turn are ranked ahead of one competitor teams. In the case of a national team tie, the best individual placing decides.

or

ii) By adding the scores of the three **best scoring** members of the **national** team together ~~unless there is a fourth member of the team (who must always be a junior) in which case it will be the three best scoring members~~.

In the case of a national team tie, the team with the lower sum of place numbers, given in order from the top, wins. If still equal, the best individual placing decides.

For F2C, in either method of national team classification, a “member” is a two-competitor team.

b) For World and Continental Championships gold, silver and bronze team medals, produced by the FAI to a smaller size than the standard FAI medals, will be

awarded to the first, second and third place **national** team members and team managers, except for Space Modelling where only one medal shall be awarded per team per class per age division. The cost is to be borne by the organising NAC.

c) When teams consist of four **or five** competitors or, in the case of F2C, four **or five** pairs of competitors (see C.5.3) then all the team members in first, second and third place will be awarded medals and shall be entitled to be on the podium.

Reason: Encourage participation of women in aeromodelling contests.

Volume F1 – Free Flight begins overleaf

15.4 Section 4 Volume F1 - Free Flight

a) F1.1.3 Working Time **F1 Subcommittee**

Add a sentence to F1.1.3 c) as follows:

a) In Championships ...

b) For all classes except F1E, ...

c) In F1E the working time shall be 5 minutes. If a competitor has not launched a flight during his working time, then he must go to the end of the queue of competitors waiting for timekeepers. **It is not allowed for a proxy to hold a place in the line for the competitor before the competitor himself has reached the end of the line.**

Reason: It is unsporting for competitors with extra helpers to have them hold a position in the queue while they are still in the starting area. This gives them the opportunity of more frequent visits to the starting area than other competitors.

b) F1.1.4 Additional Flights in Open Internationals **F1 Subcommittee**

Insert new paragraph F1.1.4:

F 1.1.4 Additional Flights in Open Internationals

In the specification of each outdoor free flight class a procedure is defined for additional flights to decide the individual placings when there is a tie. The maximum flight time is increased for each additional flight subject to conditions. This procedure must be followed at Championships and should be followed at Open Internationals.

At Open Internationals the organisers sometimes have a problem completing this regular procedure. For exceptional reasons of strong winds, poor visibility, inadequate field space, or unavailability of the field for continuation on the following day, Open Internationals may use a non-standard additional flight procedure for all outdoor F1 classes except F1E with the following conditions:

a) A non-standard procedure must be used ONLY for these exceptional reasons of strong winds, poor visibility, inadequate field space, or unavailability of the field for continuation on the following day.

b) If a "DT flyoff" is specified it should follow:

i) The procedures for a regular additional flight for the class are followed

ii) Models to be used for these flights should have a dethermalisation action of tilting the wing or tailplane by an angle of at least 40 degrees from the horizontal axis of the model

iii) A time at which models should dethermalise is defined. This time should be at least 90 seconds

iv) Models must dethermalise at or before the specified flight time. If the model has not dethermalised by the defined time then a zero time is recorded.

v) The flight is timed to the end of the flight

c) An "altitude flyoff" may be specified when F1 altimeters have been approved by CIAM EDIC:

i) The procedures for a regular additional flight for the class are followed

ii) A maximum flight time is defined which should be at least 90 seconds

iii) The flight is timed a up to the maximum time

iv) For all competitors attaining the maximum flight time, the altitude of the model at the maximum flight time is read from the altimeter and for scoring purposes this value is rounded to the nearest metre.

v) The individual placings are determined by the highest altitudes for all flights attaining the maximum, followed by time order.

vi) Equal altitudes are considered to be a tie, which may be resolved by another additional flight.

Reason: In some circumstances, such as strong winds, poor visibility, or unavailability of field for a flight on the next morning, open internationals have held non-standard flyoffs to determine the winner. Sometimes these have been imposed at a late stage and without clear details defined. It is recognised that there are a few circumstances when conditions do not allow the regular additional flights procedure. Guidance for DT flyoffs are given with the aim of avoiding some of the variability of this procedure. It is acknowledged that DT flyoffs differ from regular free flight performance but their application is limited to being an option when conditions are exceptional. Also presented is the possibility of determining the places by altitude at the end of a short flight. This would reward the combination of launch height and height gain during the glide. This is a future possibility when F1 altimeters have been approved by EDIC and are readily available to competitors. F1E is excluded because of the ease of varying flight times by choice of launch position.

c) 3.3.9 Timing **USA**

F1C: Replace the text in 3.3.9 c) as shown:

3.3.9. Timing

~~c) The motor run must be timed by two timekeepers with quartz controlled electronic stopwatches with digital readout, recording to at least 1/100 of a second. The motor run is determined as the average of the two registered times, and this average is reduced to the nearest 1/10th of a second below.~~

c) The motor run will be certified by demonstration of the timer setting to the timekeeper(s).

Reason: Since the rule change to require F1C models to have a radio control dethermalizer system was implemented, and with the new rule (effective 1/1/2020) requiring a remote engine shutoff, most F1C sportsmen are utilizing electronic timers. Thus they have the ability to set a precise duration for the engine run which

does not vary. However, since the engine run is currently evaluated by the sound of the engine stopping, and given the time the sound takes to reach the timekeeper(s) from the model, sportsmen must set the timer to approximately 3.4 seconds. But by demonstrating the setting on their electronic timers to the timekeeper(s), it is possible to utilize the full 4 second engine run allowed. Perhaps more importantly, it removes the burden on the timekeepers of timing engine runs (especially important when dealing with inexperienced timekeepers and multiple engines running at the same time).

d) 3.3.2 Characteristics of Model Aircraft with Piston Motor(s) F1C USA

F1C: Consequence of the above proposal. Insert the following text:

F1C models must use an electronic timer(s) to control the functions of the model upon release for flight.

Reason: Electronic timers will be necessary to meet the requirements of the accompanying 3.3.9. Timing proposal.

e) 3.S.2 Characteristic F1 Subcommittee

F1S: Insert new text at the end of 3.S.2, as follows:

Nickel Cadmium (NiCad), Nickel Metal Hydrate (NiMH) and Lithium (Li) batteries can be used. Only 2 cell Lithium batteries or up to 6 cell Nickel cells can be used. Other battery related specifications in 3.8.2 apply.

Maximum duration of motor run 10 seconds during the regular flights.

Minimum weight 120 g

Maximum wing span 91.44 cm (36 inches)

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

F1S models may use radio control only for irreversible actions to control dethermalisation of the model. 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.

Reason: To bring F1S into line with the other F1 outdoor classes which allow the option of radio dethermalisation. This option increases safety and helps to avoid models landing in undesirable areas.

Volume F3 Aerobatics begins overleaf

15.5 Section 4C Volume F3 - RC Aerobatics

F3A – Radio Control Aerobatic Aircraft

a) 5.1.2 General Characteristics of RC Aerobatic Models F3 Aero Subcommittee

Add the text to the end of sub-paragraph f) as shown:

f) With the propulsion device running at full power, the measurement will be taken 90 degrees on the right-hand side, with the nose of the model aircraft pointing into the wind. The SLM microphone shall be placed on a stand 30cm above the ground in line with the propulsion device Other than the helper restraining the model aircraft, and the sound steward, no persons or sound/noise reflecting or sound absorbing objects shall be nearer than 3m to the model aircraft or the microphone. The sound/noise measurement shall be made as part of model processing. Electric powered model aircraft must have installed the same batteries for all model processing procedures. The sound test area must be located in a position that does not create a safety hazard to any person around. **Noise measurements shall not be taken with wind readings taken over 30 sec of more than 5m/s. Gusts shall be avoided.**

Reasons: Measurement with more than 5 m/s will lead to wrong results.

b) 5.1.8 Marking France

Amend sub-paragraph 5.1.8 b) with the deletion and addition of text as follows:

b) Each manoeuvre may be awarded marks by each of the judges during the flight. Every manoeuvre starts with the mark of 10 points and will be downgraded for each defect during the execution of the manoeuvre in one or multiple ~~0.5~~ **1** point steps, depending on the severity of the defect. The remaining points result in the mark for the manoeuvre. During tabulation, these marks are multiplied by a coefficient (K-Factor) which relates to the difficulty of the manoeuvre.

Reasons: During the last 2017 F3A European Championship in BELGIUM it appears that marking utilizing half points had an opposite effect to expected, and didn't help to rank the pilots. It seems to be common sense to go back to a proven marking.

Technical Secretary Comment: The change from 1 to 0.5 point steps was agreed at Plenary 2017 for introduction in 2018. This proposal will result in substantial changes in Manoeuvre Execution Guide (Annex 5B), which have not been included.

c) 5.1.10 Judging F3 Aero Subcommittee

Add the following text as sub-paragraph i), with consequent renumbering of the existing sub-paragraphs i) and j) to j) and k) respectively:

i) For the final rounds of a World or Continental Championship with more than 40 competitors, two "Judges' Assistants" (one from the panel and the reserve judge, if available, or if not two from the panel) will serve to assist the judges. They will inform the Judging panel of any wrong manoeuvres in the

flight. Judge assistant assignments will be done by random draw for each final round. Judge assistants assigned from the panel are eligible for only one of the final rounds.

Reason: The 2017 World Championship showed that judges need some help to recognise all wrong performed manoeuvres, especially with new turn around manoeuvres implemented in 2012. F3A final schedules - the unknown schedules - are very difficult, and wrong manoeuvres may be flown by pilots. According to 5.1,8c) "...Zero scores need not be unanimous, **except in cases where an entirely wrong manoeuvre was performed**. ..." Judges' assistants can concentrate on correctness of manoeuvres and give helpful advice to the other judges to apply 5.1.8c)

A test with judges' assistants was done at the 2018 European Championship and was well appreciated by the judges panel.

d) 5.1.8 Marking **F3 Aero Subcommittee**

Amend sub-paragraph c) with the addition of the text shown:

c) Any manoeuvre not completed, or flown out of sequence with the stated schedule shall be scored zero (0). Zero scores need not be unanimous, except in cases where an entirely wrong manoeuvre was performed. **When Judging Assistants (according 5.1.10 i) are being utilised, they will inform the Judging panel of any wrong manoeuvres in the flight.** Judges must confer after the flight in these cases, bringing it to the attention of the flight line director/contest director on site.

Reasons: Consequence of new proposed subparagraph 5.1.10 i)

e) 5.1.8 Marking **F3 Aero Subcommittee**

Add text to sub-paragraph e) as shown below:

e) The manoeuvring zone is vertically spread in front of and at a distance of approximately 150 m from the pilot. It is laterally limited by two virtual vertical planes above the extension of two lines on the ground each at an angle of 60 degrees left and right from the intersection of a centre line with the safety line. The centre line is positioned on the ground perpendicular to the safety line on the ground which is parallel to the runway. Two starting circles of 3m diameter are marked on the **middle of the** runway, one left and one right at minimum 15 m off the centre line, also serving for sound/noise measurement, if required. The upper limit of the manoeuvring zone is defined by the virtual plane stretching up 60 degrees from the ground at the intersection of all ground lines.

Reason: More precise wording.

f) 5.1.8 Marking **F3 Aero Subcommittee**

Amend sub-paragraph g) with the deletions and additions as shown below:

g) Manoeuvres must be performed such that they can be seen clearly by the judges. If a judge, for some reason beyond the control of the competitor, is not able to follow

the model aircraft through the entire manoeuvre, he ~~may~~ **shall** set the "Not Observed" (N.O.) mark. In this case, the judge's mark for that particular manoeuvre will be the average of the numerical marks with two digits after the decimal point, rounded up. ~~If no such average is achievable~~, **If the majority of the judges score "Not Observed",** the competitor has the right for a reflight as per paragraph 5.1.6. If, for some reason within the control of the competitor, a judge is not able to follow the model aircraft through the entire manoeuvre, he has to downgrade the manoeuvre accordingly.

Reason: More fairness to pilots. It happened that one or two of five judges scored manoeuvres which were influenced by fog and not totally visible.

g) 5.1.8 Marking **F3 Aero Subcommittee**

Modify the text in sub-paragraph m) as shown below:

m) The individual manoeuvre scores given by each judge for each competitor must be made public at the end of each ~~round~~ **flight** of competition. The team manager must be afforded the opportunity to check that the scores on each judge's score document correspond to the tabulated scores (to avoid data capture errors). The score board/monitor must be located in a prominent position at the flight line, in full view of the competitors and the public.

Reason: More precise wording.

h) 5.1.9 Classification **F3 Aero Subcommittee**

Add text to sub-paragraph a) as shown below:

a) For World and Continental Championships, each competitor will have four preliminary (Schedule P) flights, with the best three normalised scores counting to determine the preliminary ranking. The top half, but not more than 30 competitors, will then have two additional semi-final flights flying the known finals schedule. The total of the best three preliminary flights **of semi-finalists** (normalised again to 1000 points) will count as one score along with the two semi-finals scores to provide three scores, the best two to count for semi-finals classification. ...

Reason: More precise wording. With new normalization (accepted in 2017) the total of three best rounds of the Preliminaries must be renormalized only for semi-finalists because it counts as a round of the semi-final. The number of semi-finalists has to be taken in account for normalisation.

i) 5.1.9 Classification **France**

Add text to sub-paragraph a) after the first paragraph as shown below:

a) For World and Continental Championships, each competitor will have four preliminary (Schedule P) flights, with the best three normalized scores counting to determine the preliminary ranking. The top half, but not more than 30 competitors, will then have two additional semi-final flights flying the known finals schedule. The total of the best three preliminary flights (normalized again to 1000 points) will count

as one score along with the two semi-finals scores to provide three scores, the best two to count for semi-finals classification.

Alternatively for World Championships with three panels of five judges, each competitor will have three preliminary (Schedule P) flights, with the best two normalized scores counting to determine the preliminary ranking. The top half, but not more than 30 competitors, will then have two additional semi-final flights flying the known finals schedule. The total of the best two preliminary flights (normalized again to 1000 points) will count as one score along with the two semi-finals scores to provide three scores, the best two to count for semi-finals classification. ...

Reason: To match the proposal for saving costs when there are more than 80 competitors but not enough to have a balanced budget at a WC.

j) 5.1.9 Classification **F3 Aero Subcommittee**

Modify sub-paragraph b) as shown below:

b) The top ten competitors of the semi-finals of a World or Continental Championship where there is an entry of more than 40 competitors, will then have ~~four~~ **three** additional flights to determine the individual winner. For a World or Continental Championship with less than 40 competitors, the top five competitors will advance to the finals. ~~Two~~ **One** final flight~~s~~ will be the current known finals schedule (F) and two will be unknown schedules (two different schedules, UK1 and UK2) (see 5.5). The known and unknown schedules must be flown ~~in alternating sequence, starting with the known finals schedule (F).~~ **in the following sequence: Unknown schedule 1, Final schedule F, Unknown schedule 2**. ~~The best score from the known schedule will be combined with the scores from both unknown schedules~~ **The scores of all three schedules will count** for final classification. In the case of a tie the semi-final score will be used to decide the higher classification.

Reason: The final day on World and Continental Championships is a very tough day for organizers and officials. Judges finalise their hard work, organizers have to prepare the price giving ceremony, the jury has to approve the results. With three final rounds it would be also possible to have some time to check results and to prepare prize giving and to present F3A to spectators and to have some show flights.

As both unknowns count, it isn't necessary to fly two F-Rounds and to drop off the lowest of them.

k) 5.1.9 Classification **F3 Aero Subcommittee**

Modify sub-paragraph a) as shown below:

a) For World and Continental Championships, each competitor will have four preliminary (Schedule P) flights, with the best three normalised scores counting to determine the preliminary ranking. The top half, but not more than 30 competitors, will then have two additional semi-final flights flying the known finals schedule. The total of the best three preliminary flights (normalised again to 1000 points) will count

as one score along with the two semi-finals scores to provide three scores, the best two to count for semi-finals classification.

In the event of adverse weather where flying of all rounds is not possible the classification would be determined on rounds completed as follows:
Preliminaries: one round=one flight counts, two rounds= best one flight counts, three rounds=best two flights count.
Semifinals: one round=the total of the counting preliminary flights (normalised again to 1000 points) with the one semifinals flight count.
Finals: ~~one round=one flight counts, two rounds=two flights count, three rounds, best one flight out of first and third round with flight of second round count.~~ **All finished rounds count.**

Reason: Consequence of proposal for 5.1.9 b)

l) 5.1.9 Classification **France**

Amend sub-paragraph b) as shown below:

b) The top ten competitors of the semi-finals of a World or Continental Championship where there is an entry of more than 40 competitors, will then have four additional flights to determine the individual winner. For a World or Continental Championship with less than 40 competitors, the top five competitors will advance to the finals. Two final flights will be the current known finals schedule (F) and two will be unknown schedules (two different schedules, UK1 and UK2) (see 5.5). The known and unknown schedules must be flown in alternating sequence, starting with the known finals schedule (F). The best **three** scores from **both** ~~the~~ known ~~schedule will be combined with the scores from~~ and **both** unknown schedules **will determine** the final classification. In the case of a tie the semi- final score will be used to decide the higher classification.

Reason: Both the Preliminary and Semi-finals classification give a chance to pilots to place normally in case of a technical problem during a flight by skipping one flight. Having a technical issue during an unknown final flight actually ruin all the chance of the pilot who place immediately last in the finals.
This is not fair, and don't take in account all the training, and personal investment of the pilot concerned.
The finals should be treated as Preliminary and Semi-finals are.
F3A Finals must not be a lottery.

m) 5.1.9 Classification **F3 Aero Subcommittee**

Modify sub-paragraph d) by deleting the text as shown below:

d) For World and Continental Championships, the scores for all rounds, preliminary, semi-finals and finals, will be computed using the Tarasov-Bauer-Long (TBL) statistical averaging scoring system. Only computer tabulation systems containing the TBL algorithm and judge analysis programs that have been Subcommittee approved can be used at World and Continental Championships. ~~To be eligible for approval a computer tabulation system has to deliver in traceable test runs copies of the official results of one World Championship and one European Championship held within the previous five years at the date of application.~~

Reason: With new normalization (accepted in 2017) it is not possible to test the software with the official results of former World and Continental Championships. Within the subcommittee there are experienced people to approve and check software.

n) 5.1.9 Classification **France**

Add text to sub-paragraph e) as shown below:

e) All scores for each round, preliminary, semi-final and finals, will then be normalized as follows: **When all competitors have** ~~The average score of the top half of competitors~~ flown in front of a particular group of judges (i.e. a round), **the highest score** shall be awarded 1000 points. The remaining scores for that group of judges are normalized to a percentage of the 1000 points in the ratio of actual score over this average score.

$$\text{Points } x = \frac{S_x}{S_w} \times 1000$$

Points *x* = points awarded to competitor *x*
S_X = score of competitor *x*
S_W = score of winner of round.

Reason: During the last 2017 F3A European Championship in BELGIUM and different World Cup or other events, the classification system showed a lot of imperfections, the same that lead the F3C to stop using it during a WCh event.

o) 5.1.10 Judging **France**

Amend sub-paragraph a) with the additional text as shown below, then make consequential amendments in c) and i) as shown:

a) For a World or Continental Championship with more than 80 competitors, the organizer must appoint four panels of five judges each (a total of twenty judges). The judges must be of different nationalities. Those selected must reflect the approximate geographical distribution of teams participating in the previous World Championship with the final list approved by the CIAM Bureau. At least one third, but not more than two thirds of the judges must not have judged at the previous World Championship. Judge assignment to the four panels will be by random draw.

Option: For a World Championship with more than 80 competitors, but not enough to have a balanced budget the organiser has the possibility to appoint three panels of five judges each (a total of fifteen judges). The judges must be of different nationalities. Those selected must reflect the approximate geographical distribution of teams participating in the previous World Championship with the final list approved by the CIAM Bureau. At least one third, but not more than two thirds of the judges must not have judged at the previous World Championship. Judge assignment to the three panels will be by random draw.

cont/…

c) For the semi-final rounds of a World Championship the judges will be arranged in two groups of ten judges **or one group of seven judges and one group of eight judges (case of 15 judges)**. Assignment to the two groups will be by random draw.

i) For the final rounds of a World or Continental Championship with more than 80 competitors, **one panel of twenty or fifteen judges may be used for the final rounds**. ~~the twenty judges will be arranged in three groups, a left hand group of five judges to judge only the left turn-around manoeuvres, a centre group of ten judges to judge only the centre manoeuvres and a right hand group of five judges to judge only the right turn-around manoeuvres. Judge assignments to the three groups will be by random draw for rounds one and two (one known and one unknown round) with a second draw for rounds three and four, except a judge will not serve in the same group as in the previous draw. For each competitor, the score from the three groups (following TBL computation) will be combined for a total score for the flight.~~

Reason: A European F3A championship brings together around 70 pilots and requires 10 judges whereas a World Championship organised in Europe brings together a hundred pilots and requires 20 judges.

If organized outside Europe, it only brings together around 80 pilots.

It is therefore clear that the amount of the commitments represents only a small part of the budget of a World Championship and the organiser has some difficulties to establish a non-deficit budget.

In this situation this proposal is to reduce the number of judges to 15, saving one day of competition, (8 days instead of 9 days) when the number of entries don't help to balance the budget.

3 panels of 5 judges (A, B, C) and 3 groups of pilots (GR1, GR2, GR3)

3 preliminary flights for all pilots on the program P.

Reserve day which allows to organise the briefing of the judges on the program F with training flights and also to the pilots qualified for the semi-finals to train on the program F.

Two semi-final rounds with a panel of 7 judges and another one of 8 judges.

Finals with 2 rounds of F program and 2 rounds of unknown programs with a panel including all the judges.

p) 5.1.10 Judging **F3 Aero Subcommittee**

Replace the text in sub-paragraph i) as shown below. Note: if item c) regarding the addition of new sub-paragraph i) is agreed, this becomes sub-paragraph j):

i) ~~For the final rounds of a World or Continental Championship with more than 80 competitors, the twenty judges will be arranged in three groups, a left hand group of five judges to judge only the left turn-around manoeuvres, a centre group of ten judges to judge only the centre manoeuvres and a right hand group of five judges to judge only the right turn-around manoeuvres. Judge assignments to the three groups will be by random draw for rounds one and two (one known and one unknown round) with a second draw for rounds three and four, except a judge will not serve in the same group as in the previous draw. For each competitor, the score from the three groups (following TBL computation) will be combined for a total score~~

~~for the flight~~. **All judges, (except the Judges assistants), will judge all manoeuvres of the final rounds of World and Continental Championships. Electronic scribes have to be used for final rounds.**

Reason: Splitting the panel into three groups was introduced for World Championships with more than 80 Competitors and 20 judges a long time ago because there wasn't enough space for 40 people (judges + scribes). With electronic scribes, all judges have enough space in the judging area at the competitions' sites.

Electronic scribes have been used at several Cat 1 events for several years and allow judges to concentrate much better on judging. Human scribes are not necessary anymore.

Judges assistants will help with wrong performed manoeuvres.

The scoring system will be simplified because it isn't necessary to have different TBL Groups any more.

q) 5.1.13 Schedule of Manoeuvres F3 Aero Subcommittee

Amend introduction, delete obsolete schedule A-18; add new schedule A-23 as shown below:

~~For 2017-2018 Schedule A-18 is recommended to be flown in local competitions so as to offer advanced pilots a suitable way to achieve skills to step-up to P-19 Schedules.~~
For 2019-2020 Schedule A-20 is recommended to be flown in local competitions so as to offer advanced pilots a suitable way to achieve skills to step-up to P-21.
For 2021-2023 Schedule A-23 is recommended to be flown in local competitions so as to offer advanced pilots a suitable way to achieve skills to step-up to P-23 Schedules.

Advanced Schedule A-23 (2021-2023)	**K-Factor**
A-23.01 Top Hat with half roll on top	**K 3**
A 23-02 Half Square Loop	**K 2**
A-23.03 Push-Pull-Push Humpty-Bump with half roll, half roll	**K 3**
A-23.04 Half Square Loop on Corner with half roll	**K 3**
A-23.05 Forty Five Degree Upline with roll	**K 4**
A-23.06 Half Eight Sided Loop	**K 3**
A-23.07 Roll Combination with two consecutive half rolls in opposite direction	**K 3**
A-23.08 Pushed Immelman Turn with half roll	**K 2**
A-23.09 Inverted Spin two and a half turns	**K 4**
A-23.10 Pull-Pull-Pull Humpty-Bump, with half roll. (Option: quarter roll, quarter roll)	**K 3**
A-23-11 Reverse Figure ET	**K 3**
A-23.12 Square Loop with half roll	**K 2**
A-23.13 Figure M with quarter rolls	**K 5**
A-23-14 Trombone	**K 3**

A.23.15 Triangle with two consecutive quarter rolls, two consecutive quarter rolls	**K 3**
A-23.16 Reverse Shark Fin with half roll	**K3**
A-23.17 Loop with knife-edge flight	**K4**
	Total K = 53

Reason: F3A schedules change every two years.

r) 5.1.13 Schedule of Manoeuvres F3 Aero Subcommittee

Amend introduction, delete obsolete schedule F-19, add new schedule F-23 as follows:

~~For 2018- 2019...Schedule F-19 will be flown in the semi-finals, as well as in the finals, alternating with unknown schedules.~~
For 2020-2021 Schedule P-21 will be flown in the preliminaries. Schedule F-21 will be flown in the semi-finals, as well as in the finals, ~~alternating~~ **together** with unknown schedules.
For 2022-2023, Schedule F-23 will be flown in the semi-finals, as well as in the finals, together with unknown schedules.

Semifinal/Final Schedule F-23 (2022-2023)	**K-Factor**
F-23.01 Knife Edge Rolling Loop	**K 5**
F 23-02 Stall Turn with snap roll, roll	**K 4**
F-23.03 Eight consecutive 1/8 rolls	**K 4**
F-23.04 Reverse Shark Tooth with three consecutive quarter rolls, three quarter roll	**K 3**
F-23.05 Square Loop on corner with quarter roll, half roll, half roll, quarter roll	**K 5**
F-23.06 Push-Pull-Pull Humpty-Bump with consecutive half rolls, integrated roll, snap roll	**K 4**
F-23.07 Horizontal Eight with rolls integrated	**K 6**
F-23.08 Reverse Figure ET with half roll, consecutive quarter rolls	**K 3**
F-23.09 Knife Edge Forty Five Degree Upline with two consecutive snap rolls in opposite direction	**K 6**
F-23.10 Reverse Vertical Shark Tooth with two consecutive half rolls in opposite direction, two consecutive quarter rolls, roll	**K 3**
F-23-11 Reverse Double Fighter Turn with three consecutive quarter rolls, half roll, half roll, three consecutive quarter rolls	**K 6**
F-23.12 Figure Six, with roll	**K 2**
F-23.13 Spin with two and a quarter turns, two and a quarter turns in opposite direction	**K 5**
F-23-14 Half Cuban Eight, with two half rolls in opposite direction, one and half snap	**K 4**
A.23.15 Rolling Circle with half rolls in opposite direction integrated	**K 5**
F-23.16 Half Square Loop with half rolls in opposite direction	**K 2**

F-23.17 Avalanche (from top) with half rolls integrated, snap, half roll integrated K 5

Total K = 72

Reason: F3A schedules change every two years.

s) 5.1.13 Schedule of Manoeuvres F3 Aero Subcommittee

Amend introduction, delete obsolete schedule P-19; add new schedule P-23 as shown below:

~~For 2018-2019 Schedule P-19 will be flown in the preliminaries~~.
For 2020-2021 Schedule P-21 will be flown in the preliminaries. Schedule F-21 will be flown in the semi-finals, as well as in the finals, ~~alternating~~ **together** with unknown.
For 2022-2023 Schedule P-23 will be flown in the preliminaries.

PRELIMINARY SCHEDULE P-23 (2022-2023)	**K-Factor**
P-23.01 Top Hat with two quarter rolls up, full roll, two quarter rolls down	**K 4**
P-23.02 Half Square Loop with half roll	**K 2**
P-23.03 Pull-Pull-Push Humpty-Bump with roll, half roll	**K 4**
P-23.04 Half Square Loop on Corner with half roll, half roll	**K 3**
P-23.05 Forty Five Degree Upline, with one and a half snap roll	**K 5**
P-23.06 Half Eight Sided Loop	**K 3**
P-23.07 Roll Combination with two consecutive half rolls, two consecutive half rolls in opposite direction	**K 4**
P-23.08 Pushed Immelman Turn with half roll	**K 2**
P-23.09 Inverted Spin two and a half turns	**K 4**
P-23.10 Pull-Pull-Push Humpty-Bump, with half rolls. (Option: three quarter roll, quarter roll)	**K 3**
P-23.11 Reverse Figure ET with two consecutive half rolls in opposite direction, two consecutive quarter rolls	**K 4**
P-23.12 Half Square Loop with half roll	**K 2**
P-23.13 Crossbox Figure M, with three quarter rolls	**K 5**
P-23.14 Fighter Turn with quarter rolls	**K 4**
P-23.15 Triangle with half roll, two consecutive quarter rolls, two consecutive quarter rolls, half roll	**K 3**
P-23.16 Reverse Shark Fin with half roll, two consecutive quarter rolls	**K 3**
P-23.17 Loop with half roll integrated	**K 5**
	Total K = 60

Reason: F3A schedules change every two years.

t) Annex 5A: F3A – Description of Manoeuvres F3 Aero Subcommittee

*Delete the existing manoeuvre descriptions of schedules A-18, P-19, and F-19 and replace with descriptions of A-23, P-23 and F-23. Refer to Agenda **Annex 7a.***

Reason: F3A schedules change every two years.

u) Annex 5N: Rules for World Cup Events F3A, F3P, F3M F3 Aero Subcommittee

In sub-paragraph 5N.3 Contests, modify d) as shown below:

5N.3 Contests

d) rounds should be organised in one of the following combinations, while rounds of F-Schedules may be run for a limited number of competitors only as a "fly-off".
- Four rounds of P-schedule, two rounds of F-schedule. The total of the best three preliminary flights (normalised again to 1000 points) will count as one score along with the two fly-off scores to provide three scores, the best two to count for classification.
- Three rounds of P-Schedule with the best two flights counting
- Two rounds of P-Schedule with the best one flight plus one round of F-Schedule counting
- Three rounds of P-Schedule with the best two flights plus one round of F-Schedule counting

~~P- and F-Schedules must be performed in full, 17 manoeuvres each~~. **Other combinations are subject to be confirmed by the World Cup Coordinator or the F3 Aerobatics Chairman in advance.**

Reason: More flexibility to organizers, as well as the possibility to adapt the schedule to local requirements.

Class F3M – R/C Large Aerobatic Aircraft

v) 5.10.4 Number of flights Spain

Modify paragraph 5.10.4 as follows:

(~~A competition for model aircraft class F3M unlimited is based on three rounds:~~
~~- A minimum of one flight of 1 known sequence, valid for one year.~~
~~- A minimum of one flight of 1 unknown sequence. This unknown sequence is given to each pilot before the round, without any possibility of practising the sequence. The difficulty of this round shall be equivalent to that of the known sequence.~~
~~- A minimum of one flight of a 4 minutes freestyle program chosen by the competitor.~~
~~Each competitor has the right to a minimum of three official flights (one known schedule + one unknown schedule + one freestyle schedule).~~
A competition is formed by two independently-scored series: Classical Aerobatics series and a Free-style series.
The classical aerobatics will have the two following rounds:
- A minimum of two flights of 1 known sequence, valid for one year.
- A minimum of two flights of different unknown sequences. These unknown sequences are given to each pilot before the round, without any possibility of practising the sequence. The difficulty of this round shall be equivalent to that of the known sequence.
- The best known flight, and the best unknown flight normalized scores will be considered.

The Free-style series will include two flights of a four-minutes free-style program, chosed by the competitor. The best normalized score of the two flights will be considered.

Reason: To make the FAI rules closer to the regulations used in the European Acro Cup and IMAC-type competitions.

Technical Secretary Note: Further on a proposal refers to Classic Aerobatics, yet here it is Classical Aerobatics. Which name is to be used?

w) 5.10.5 Definition of an attempt **Spain**

Amend paragraph 5.10.5 as shown below:

There is an attempt when the competitor is given permission to start.

~~An attempt begins when the pilot or caller makes a visual signal indicating to the judges when the pilot is starting the sequence. A visual signal is mandatory to initiate the attempt. If there is no visual signal made the pilot becomes subject to the other standard constraints stipulated in these rules, e.g., time limit for starting, no aerobatics before starting the sequence, etc. Once the attempt is made by means of the visual signal, judging will begin as soon as the aircraft departs from the wings-level horizontal entry line and enters the first figure of the sequence. The horizontal entry line to the first figure of a sequence is not judged.~~

An attempt starts when the pilot or their assistant indicates to the competition judges the entry in the box, by an audible and visual signal meaning BOX or IN THE BOX (or equivalent expression) in the official language of the competition.

If no signal is made by the pilot or the assistant, the judges will not score the flights and will inform to the Director of the contest.

When the signal is made, the judges will start the score of the full figure made by the pilot, scoring "zero" the previous ones.

Reason: The visual signal forces the judges to look to the pilot, all the time. The experience indicates that there is a possible confusion of the signal with the fact that the assistant will extend their arm to avoid the side sunlight.

x) 5.10.9 Aerobatic airspace **Spain**

Amend sub-paragraph b) in 5.10.9 regarding the Safety line, as follows:

b) Safety line:

~~From the competitor´s position, the "safety line" is located 30 metres ahead of the pilot point. This line delimits the "no-fly" zone for safety reasons and the aircraft must at all times remain on the side of the safety line away from the contestants, pits and spectators. The safety line extends to infinity. The judges shall zero (0) any figures where the aircraft completely or partially crosses the safety line. For repeated safety line violations by a competitor during a flight, the contest director may ground the flight in progress and zero the round. If a competitor repeatedly violates the safety line, the contest director may disqualify the competitor.~~

~~If there is no natural barrier or demarcation at or beyond 30 meters that can be used to clearly mark the safety line, the contest director must set up clearly visible markers at the safety line distance for the judges to use in enforcing deadline observance.~~

~~Audible and visual signals to indicate violations of the aerobatic airspace are not to be employed.~~

From the competitor's position, the "safety line" is located 20 metres ahead of the pilot point, 30 metres ahead of the judges and a minimum of 50 metres ahead of the spectators.

This line marks the "no-fly" zone for safety reasons and the aircraft must at all times remain on the flying side of the safety line. The safety line extends to infinity. The judges shall zero (0) any figures where the aircraft completely or partially crosses the safety line. For repeated safety line violations by a competitor during a flight, the contest director may ground the flight in progress and zero the round. If a competitor repeatedly violates the safety line, the contest director may disqualify the competitor.

If there is no natural barrier or demarcation that can be used to clearly mark the safety line, the contest director must set up clearly visible markers at the safety line distance for the judges to use in enforcing deadline observance.

Reason: It is better than the safety distance in known and unknown flights and free style flights, be the same.

y) 5.10.10 Marking — Spain

After sub-paragraph i) delete the section titled '1. Sound presentation score for Known and Unknown flights', as shown below. Renumber the following paragraphs.

~~1. Sound presentation score for Known and Unknown flights~~:

~~a) Judges will evaluate each individual flight flown in its entirety for overall sound presentation. Each judged Known and Unknown sequence, shall have one "figure" added to the end of the score sheet after individually judged figures. This figure shall be known as the Sound Score. The Sound Score will have a 30 K value.~~

~~b) The sound presentation will be scored with a mark on a scale of 10 to 0 with 10 denoting "Very Quiet," 5 denoting "normal" and 0 denoting "Very noisy." Whole mark will be used for scoring. This sound mark will then be multiplied by the 30 K value and included in the total flight raw points score for the sequence. Note that each judge's score is independent of the other(s) and no conferencing on the sound score is required.~~

~~c)If a competitor receives a sound score of three (3) or less for the round from two or more judges, the competitor and his team manager will be notified of the problem and will be requested by the Contest Director to adjust or modify the aircraft in order to reduce the sound level before the next round. If that competitor, after notification, again receives a sound score of three (3) or less for the next round from two or more judges, that pilot will be disqualified.~~

Reason: It is a subjective appreciation, and has no sense with the incorporation of the electrical engines. A sound measurement, made at the start of the flight, will be enough.

z) 5.10.11 Classification Spain

Delete sub-paragraphs c) d) and e) and replace with a single paragraph c) as shown below:

~~c) Final classification will be done considering the sum of the scores of the three normalized flights: known, unknown, and freestyle multiplied by the following coefficients:~~
~~Known .....40%~~
~~Unknown .....40%~~
~~Freestyle.....20%~~
~~d) In the case where more than one flight of each round have been completed, the sum of the best known flight, the best unknown flight, and the best freestyle flight normalized scores will be considered.~~
~~Example: One flight known, two flights unknown, and one free-style flight have been completed: Classification is done by adding the known normalized flight score and the best score of the two unknown normalized flights scores and the freestyle normalized flight score.~~
~~e) The highest combined scores will determine the winner. In case of ties, all the normalized flights of the contestant shall be used to determine the winner.~~

c) Final classification of the Classic Aerobatics will be done considering the sum of the scores of the two best normalized flights: known and unknown, multiplied by the following coefficients:
Known 50%
Unknown 50%

The highest combined scores will determine the winner. In case of ties, all the normalized flights of the contestant shall be used to determine the winner.

Reason: This rule it is due to the presence of two categories in the competition.

aa) 5.10.11.1 Classification (For World & Continental Championships) Spain

Amend this section. Delete the existing sub-paragraphs and replace in their entirety with the text shown below:

5.10.11.1 For World and Continental championships:

~~a) Preliminary: Each competitor will have 6 preliminary flights.~~

~~(2) Flights of 1 known sequence~~

~~(2) Flights of 1 unknown sequence~~

~~(2) Flights of a 4 minutes freestyle schedule of the competitor's choice~~

~~b) The sum of the best known flight, the best unknown flight, and the best freestyle flight normalized scores will be considered to determine the preliminary ranking.~~

~~c) The top ten pilots are qualified for the final.~~

~~d) In the event of adverse weather conditions where no further flying is possible, the preliminary classification may be determined by the sum of the best flights completed.~~

~~e) Final: Each of the ten competitors will have 6 final flights.~~

~~(2) Flights of 1 known sequence~~

~~(2) Flights of 1 unknown sequence~~

~~(2) Flights of a 4 minutes freestyle schedule of the competitor's choice~~

~~f) The sum of the best final known flight, the best final unknown flight, and the final best freestyle flight normalized scores will be considered to determine the final ranking.~~

~~g) In the event of adverse weather conditions where no further flying is possible, the final classification may be determined by the sum of the best flights completed.~~

Classical Aerobatics series:

a) Preliminary: Each competitor will have 4 preliminary flights.

2 flights of the known sequence

2 flights of different unknown sequences

b) The sum of the best known flight, and the best unknown flight normalized scores will be considered to determine the preliminary ranking.

c) The top ten pilots are qualified for the final.

d) In the event of adverse weather conditions where no further flying is possible, the preliminary classification may be determined by the sum of the best flights completed.

e) Final: Each of the ten competitors will have 4 final flights.

2 flights of the known sequence

2 flights of different unknown sequences

f) The sum of the best final known flight and the best final unknown flight normalized scores will be considered to determine the final ranking.

g) In the event of adverse weather conditions where no further flying is possible, the final classification may be determined by the sum of the best flights completed.

Free Style series:

a) Preliminary: Each competitor will have 2 preliminary flights.

b) The design of the 4 minutes freestyle flights will be determined by the competitor.

c) The best normalized score of the two flights will be considered to determine the preliminary ranking.

d) The top ten pilots are qualified for the final.

e) In the event of adverse weather conditions where no further flying is possible, the preliminary classification may be determined by the sum of the best flights completed.

f) Final: Each of the ten competitors will have 2 final flights.

g) The design of the 4 minutes freestyle flights will be determined by the competitor.

h) The best freestyle flight normalized scores will be considered to determine the final ranking.

i) In the event of adverse weather conditions where no further flying is possible, the final classification may be determined by the sum of the best flights completed.

Reason: This rule it is due to the presence of two categories in the competition.

ab) 5.10.11.2 Team Classification **Spain**

Replace the note which is after sub-paragraph a) as shown below:

a) The team classification is established at the end of the competition (after the finals) by adding the numerical final placing of the best three team members of each nation. Teams are ranked from the lowest numerical scores to the highest, with complete three-competitor teams, ahead of two-competitor teams, which in turn are ranked ahead of one-competitor teams. In the case of a tie, the best individual placing decides the team ranking.

~~b) Note: Final flights to determine the individual winner are usually only required for World and Continental Championships. For open international events, national championships, and domestic competitions, In the case where more than one flight of each round have been completed, the sum of the best known flight, the best unknown flight, and the best freestyle flight normalized scores may be used to determine the individual winner and team placing~~

Note: Final flights to determine the individual winner are usually only required for World and Continental Championships. For open international events, national championships, and domestic competitions where more than one flight of each round have been completed, the sum of the scores corresponding to the best known flight and the best unknown flight may be used to determine the individual winner and team placing in the Classical Acrobatics category. The same system will be used to decide the winners of the Free-style category.

Reason: This rule it is due to the presence of two categories in the competition.

ac) 5.10.13 Organisation for R/C Large Aerobatic Model Aircraft Contests **Spain**

Add the following to 5.10.13 t):

t) Before to start the sequence and before landing, competitors shall only be allowed to perform the following trim and positioning manoeuvres:

- Turns.

- Half Cubans with only a single ½ roll on the 45 down line.

- Reverse Half Cubans with only a single ½ roll on the 45 up line.

-The ½ roll is optional based on aircraft positioning required starting the sequence.

- Half loops up or down (Immelman or Split S) with only one half roll on entry or exit.

-Single half roll to inverted immediately before to start the sequence for the case in which an inverted entry to the first figure is required.

-Single half roll to upright after the end of sequence for the case in which an inverted exit from the last figure is required.

-A vertical up or down line with a simple push/pull for entry and exit. A single 1/2 roll is allowed on this vertical line only if required to orient the aircraft properly for entry to the first figure.

-Humpty Bump with ¼ of upward roll and ¼ of falling roll

Reason: Positioning manoeuver on the X-axis, approaching or putting away the model.

ad) 5.10.16.1 Marking Criteria **Spain**

Replace the entire section as shown below:

Judging of the Freestyle program comprises three elements. Each element contains several criteria, with marks ranging from 10 to 0. Half (0.5) points may be used in judging. Each mark is multiplied by a difficulty coefficient (K-Factor).

~~a) Technical performance: Three criteria~~
~~Technicality of the manoeuvres: K= 20.~~
~~Complicated and technically challenging manoeuvres must be awarded higher marks, provided there is not a lack of quality in their execution. Simple and less complex manoeuvres should attract fewer marks.~~
~~Quality: K= 20.~~
~~The entire flight must be devoid of “missed” manoeuvres, and must exhibit all-round good quality. The fact that it is a freestyle schedule must not allow the performance to become sub-standard in technicality and quality. It is not intended to be a circus performance.~~
~~Diversity: K= 20~~
~~The competitor must avoid repetitive use of the same manoeuvres, and only in exceptional circumstances will repeat manoeuvres be tolerated to emphasise a particular passage in the music.~~
~~b) Artistic impression: Two criteria~~
~~Harmony with music, program choreography: K= 40~~
~~The music (choreography) has to enhance the presentation and to create a complementary atmosphere. The flight performance should be synchronised with the music and must not be a "3Dsketch" with background music. On the other hand the music must not detract from the presentation. The selected music piece(s) should contain fast-slow, soft-loud and dramatic sections. The manoeuvres should follow the music and end with it. The mood of the selected music should be reflected in the manoeuvres and the presentation. Show effects can support this. Music pieces with little contrast, variety or tempi result in downgrades.~~
~~Enhancers: Smoke producing devices, or streamers: K=20~~
~~The use of these devices should be used to accentuate or emphasise some manoeuvres. Improper or inefficient use, even if impressive, should not result in full marks being given.~~
~~When, for example, an impressive smoke producing device is used to accentuate a manoeuvre or a dramatic section of music, 3 points mark should be given. If the smoke is used throughout the duration of the flight, only 1 point should be given.~~

~~c) Positioning: Two criteria~~
~~Setting of the manoeuvres: K= 30~~
~~The schedule must be well structured, with good placement and positioning of the manoeuvres, giving judges the best visibility of the entire performance. Marks should be deducted if, by design or by the influence of the wind, the schedule is noticeable biased to the left or to the right.~~
~~Sequence of manoeuvres: K= 30~~
~~The entire flight must retain the interest of judges, with a natural flow from start to finish, with coherent matching of manoeuvres.~~

Difficulty - Technicality of the manoeuvres: K= 20.
Complicated and technically challenging manoeuvres must be awarded higher marks, provided there is not a lack of quality in their execution. Simple and less complex manoeuvres should attract fewer marks.

Diversity: K= 20
The competitor must avoid repetitive use of the same manoeuvres, and only in exceptional circumstances will repeat manoeuvres be tolerated to emphasise a particular passage in the music.

Harmony with music, program choreography: K= 30
The music (choreography) has to enhance the presentation and to create a complementary atmosphere. The flight performance should be synchronised with the music and must not be a "3Dsketch" with background music. On the other hand the music must not detract from the presentation. The selected music piece(s) should contain fast-slow, soft-loud and dramatic sections. The manoeuvres should follow the music and end with it. The mood of the selected music should be reflected in the manoeuvres and the presentation. Show effects can support this. Music pieces with little contrast, variety or tempi result in downgrades.

Precisión - Quality: K= 30.
The entire flight must be devoid of "missed" manoeuvres, and must exhibit all-round good quality. The fact that it is a freestyle schedule must not allow the performance to become sub-standard in technicality and quality. It is not intended to be a circus performance.

Enhancers: Smoke producing devices, or streamers: K=10
To judge the effects of the show, the following rules will be used:
The maximum score is 10.
Engine smoke: 0 (without smoke) – 2 (light smoke) – 4 (dense smoke).
Streamers: 0 (no streamers) – 1 (capacity to launch streamers) – 2 (properly used and fully deployed streamers).
Smoke cartridge: 0 (without cartridges) - 1 (one cartridge on the fuselage) – 2 (two cartridges on the wings).

Confetti: 0 (without confetti) – 2 (throwable confetti, only biodegradable)

Reason: To make the FAI rules closer to the regulations used in the European Acro Cup and IMAC-type competitions.

ae) 5.10.16.2 Safety **Spain**

Add a new sub-paragraph d) to the section as shown below:

d) In the following special cases, the pilots will score zero in the free-style sequence.

- When the safety line is crossed (excluding the take off and the landing).

- To lose fragments of the plane (except fragments of the effects).

- Touching the land, including a tree or the grass.

Reason: In order to unify the safety line position for all flights in the contest.

Class F3P – Radio Control Indoor Aerobatic Aircraft

af) 5.9.13 Schedules of Manoeuvres **F3 Aero Subcommittee**

Delete obsolete schedules AA-19, AP-19, AF-19, add new schedules AA-21, AP-21, AF-21 as follows:

Advanced Schedule AA-21 (2020-2021)

AA-21.01 Cuban Eight with half roll, half roll	**K 3**
AA-21.02 Crossbox Stall Turn combination with quarter roll, quarter roll	**K 3**
AA-21.03 Horizontal Triangle Circle with two half rolls opposite, roll	**K 4**
AA-21.04 Half Reverse Cuban Eight with roll	**K 3**
AA-21.05 Torque Roll	**K 5**
AA-21.06 Half Square Loop on Corner	**K 2**
AA-21.07 Knife-Edge Flight	**K 3**
AA-21.08 Pull-Push-Pull Humpty Bump Crossbox Combination with quarter roll	**K 3**
AA-21.09 Square Loop with half roll, half roll	**K 5**
AA-21.10 Immelman	**K 3**
AA-21.11 Double Key from Top	**K 4**
	Total K = 38

Preliminary Schedule AP-21 (2020-2021)

AP-21.01 Knife-Edge Cuban Eight with quarter roll, half roll quarter roll	**K 4**
AP-21.02 Crossbox Stall Turn combination with quarter roll, two consecutive quarter rolls, quarter roll	**K 4**
AP-21.03 Horizontal Circle with two half rolls opposite integrated	**K 5**
AP-21.04 Half Reverse Cuban Eight with half roll, half roll integrated	**K 3**
AP-21.05 Three quarter Torque Roll, quarter Torque Roll in opposite direction with quarter rolls integrated into the quarter loops	**K 5**
AP-21.06 Half Outside Loop, Loop	**K 2**
AP-21.07 Knife-Edge Roll Combination with three quarter roll, half roll opposite, three quarter roll opposite	**K 4**
AP-21.08 Figure Nine Crossbox Combination with quarter roll, two consecutive quarter rolls, half roll integrated	**K 4**
AP-21.09 Square Loop on Corner with quarter roll, quarter roll	**K 5**

AP-21.10 Comet with half roll, half roll K 3
AP-21.11 Double Key from Top with ¼ roll, ¼ roll K 4
Total K = 43

FINAL SCHEDULE AF-21 (2020-2021)
AF-21.01 Half Hourglass with two consecutive one eighth rolls, quarter roll, half roll K 4
AF-21.02 Half Cuban Eight with roll integrated, two consecutive quarter rolls in opposite direction K 3
AF-21.03 Vertical Square Eight with ¼ roll, ½ roll, ¼ roll, ¼ roll, ½ roll, ¼ roll K 5
AF-21.04 Pull-Push-Pull Humpty Bump with quarter roll, two consecutive opposite half rolls integrated, quarter roll K 4
AF-21.05 Vertical Eight with half torque roll, half roll integrated, half torque roll, half roll integrated K 6
AF-21.06 Corner Combination with two consecutive quarter rolls, three quarter roll K 2
AF-21.07 Reverse Double Fighter Turn with quarter roll, half roll, half roll, quarter roll K 6
AF-21.08 Half Loop with integrated roll K 3
AF-21.09 Horizontal Square with quarter roll, quarter circle with half roll integrated, two consecutive quarter rolls, quarter circle with half roll integrated, knife edge loop, quarter circle with half roll integrated, two consecutive quarter rolls, quarter circle with half roll integrated, quarter roll K 5
AF-21.10 Trombone with three quarter roll, half roll integrated, three quarter roll K 4
AF-21.11 Double Stall Turn with quarter roll, half roll integrated, quarter roll K 5
Total K = 47

Reason: F3P Aerobatic schedules change every two years.

ag) Annex 5M: F3P Description of Manoeuvres F3 Aero Subcommittee

Delete the existing manoeuvre descriptions of schedules AA-19, AP-19, and AF-19 and replace with descriptions of AA-21, AP-21and AF-21. Refer to Agenda ***Annex 7b.***

Reason: F3P Aerobatic schedules change every two years.

Class F3S – Radio Controlled Aerobatic Jet Model Aircraft

ah) 5.12.1 Definition – 5.12.12 Execution of Manoeuvres F3 Aero Subcommittee

Replace the text from 5.12.1 to 5.12.12. Refer to ***Annex 7c****.*

Reasons:

1. The current F3S texts refer to F3A texts. These specific text parts are integrated into F3S rules, now.
2. New technical developments and interests of pilots are integrated.

3. Some ambiguous parts are clarified.
4. Increasing interest in F3S in many countries.
5. Active pilots and judges were implemented into the development of the new and amended F3S Rules.

The F3 Aerobatics Subcommittee will kindly ask for early implementation.

ai) 5.12.13 Schedule of Manoeuvres F3 Aero Subcommittee

Delete current text 5.12.13, add new schedules F3S-Basic, F3S-Preliminary, F3S-Final, F3S-Freestyle:

5.12.13 Schedule of Manoeuvres

The schedule F3S-B is recommended to be flown in local competitions so as to offer advanced pilots a suitable way to achieve skills to step-up to P-Schedules.

The schedule F3S-P is a preliminary schedule for expert pilots in Jet Aerobatic Power Model Aircraft competitions.

The schedule F3S-F is a finals schedule for expert pilots in Jet Aerobatic Power Model Aircraft competitions.

The schedule F3S-FS (Freestyle) is for competitors to demonstrate their artistic performances in Jet Aerobatic Power Model Aircraft in conjunction with music.

Basic Schedule SB-19 from 2019	K Factor
SB-19.01: Loop	3
SB-19.02: Knife-Edge Flight	4
SB-19.03: Reverse Cuban 8 with 1/2 roll, 1/2 roll	4
SB-19.04: Figure 9 with roll up	3
SB-19.05: 45° Upline with ½ roll	3
SB-19.06: Slow roll	4
SB-19.07: Square Loop	4

Preliminary Schedule SP-19 from 2019	K Factor
SP-19.01: Loop with roll integrated over top 90 degrees	4
SP-19.02: Half reverse Cuban 8 with ½ roll	2
SP-19.03: Knife-edge Flight	3
SP-19.04: Immelmann with ½ roll	2
SP-19.05: Reverse Cuban 8 from top with ½ roll, roll	4
SP-19.06: Half Loop	1
SP-19.07: Figure 9 with roll up	3
SP-19.08: Pull-push-pull Humpty Bump with ½ roll down	3
SP-19.09: 45° Upline with 3 consecutive ½ rolls	3
SP-19.10: Half Square Loop	2
SP-19.11: Slow roll	3
SP-19.12: Half Cuban 8 with ½ roll	2
SP-19.13: Square Loop with ½ roll, ½ roll	5

Final Schedule SF19 from 2019	**K Factor**
SF-19.01: Square Loop on corner with ½ roll, ½ roll, ½ roll, ½ roll	**5**
SF-19.02: Shark Fin with two consecutive ¼ rolls	**3**
SF-19.03: Knife-edge flight with roll	**4**
SF-19.04: Pushed Immelman with roll	**2**
SF-19.05: Rolling Loop	**5**
SF-19.06: Half Square Loop with ½ roll	**2**
SF-19.07: Figure 9 with with four consecutive ¼ rolls	**4**
SF-19.08: Pull-push-pull Humpty Bump with consecutive two ¼ rolls	**3**
SF-19.09: Avalanche	**4**
SF-19.10: Top Hat with two consecutive ¼ rolls, ½ roll	**3**
SF-19.11: Knife Edge Humpty Bump with ¼ roll, ¾ roll	**4**
SF-19.12: Half square loop on corner with half roll	**3**
SF-19.13: Reverse Nine with 3/4 roll, 3/4 roll	**3**
SF-19.14: Half reverse Cuban 8 with consecutive two ¼ rolls	**3**
SF-19.15: Roll Combination with four consective 1/8 rolls, four 1/8 rolls in opposite direction	**4**

For the description of the manoeuvres, judging notes, and Aresti diagrams, see Annex 5X.

For the Manoeuvre Execution Guide, see Annex 5B.

Reasons:

1. Three new schedules with different difficulty of manoeuvres were developed to give pilots the possibility to fly schedules adapted to their skills and to attract more competitors.
2. Freestyle with jet models is will attract spectators.
3. Schedules were tested at several competitions all over the world. Active pilots and judges were implemented into the development of the new schedules.

aj) Annex 5X: F3S – Description of Manoeuvres **F3 Aero Subcommittee**

Delete the existing manoeuvre descriptions and replace with descriptions of SB-19, SP-19 and SF-19. Refer to Agenda ***Annex 7d.***

Reason: Consequence of new F3S Schedule of Manoeuvres.

Volume F3 Helicopter begins overleaf

15.6 Section 4C Volume F3 - Helicopter

F3C

a) 5.4.8 Number of Flights **F3 Heli Subcommittee**

Revise this paragraph as shown below:

5.4.8. Number of Flights

At Continental and World Championships, each competitor is entitled to four (4) official preliminary flights. After completion of the preliminary flights the top **28 pilots** ~~15~~ are entitled to **two (2) semi final flights**. **After completion of the semi final flights the top 14 pilots are entitled to two (2)** ~~three fly-off~~ **final** flights. At national and Open International Competitions the preliminary/**semi final/final** ~~fly-off~~ system is not mandatory.

Reason: The semi final schedule will make F3C more attractive.

b) 5.4.11 Classification **F3 Heli Subcommittee**

Revise this section as shown below:

5.4.11. Classification

Part of Competition	# of Competitors	# of Rounds	Classification	Ranking
Preliminary	All registered and qualified pilots	4	Sum of normalized points of each of the four rounds. Dropping the lowest result, only if there are at least 3 completed rounds	Determines the ranking of pilots classified 29… n
Semi-Final	Top 28 pilots of preliminary part of competition	2	Sum of normalized points of each of the two rounds plus the normalized result of the preliminary part of the competition. Dropping the lowest of any of these 3 results, only if there were 2 semi-final rounds completed.	Determines the ranking of pilots classified 15..28
Final	Top 14 pilots of semi-final part of competition	2	Sum of normalized points of each of the two rounds plus the normalized result of the semi-final part of the competition. Dropping the lowest of any of these 3 results, only if there were 2 final rounds completed.	Determines the ranking of pilots classified 1..14

~~After the completion of four official (preliminary) rounds, the best three scores will be used to determine the placings. The top 15 of all competitors then compete in three fly-off rounds to determine the final individual classification. The results of the best three preliminary rounds (normalised to 1000 points) will count as one score. This score, plus the three fly-off scores, provide four scores with the best three to count for~~

~~the final individual classification.~~ The ~~fly-offs~~ **finals** to determine the individual classification are only required for World and Continental Championships.

If the competition is interrupted ~~during the preliminary rounds~~, the final individual classification will be determined by counting all completed ~~preliminary~~ rounds and **by calculating according to the table above.** ~~dropping the lowest~~. ~~If the competition is interrupted during the fly-off rounds, the final individual classification will be determined by counting all completed fly-off rounds plus the results from the preliminary rounds and dropping the lowest.~~

All scores for each round will be normalised by awarding 1000 points to the highest scoring flight. The remaining scores are then normalised to a percentage of the 1000 points in the ratio of actual score over the score of the winner of the round. If only one round is possible then the classification will be based on that one round.

For example:

$Points_{(X)}$ = $Score_{(X)}$ divided by $Score_{(W)}$ multiplied by 1000

Where $Points_{(X)}$ = Points awarded to competitor X

$Score_{(X)}$ = Score of competitor X

$Score_{(W)}$ = Score of winner of the round

Points (x) should be calculated to at least two decimal places and recorded (truncated) to two places after decimal point.

Ties for any of the first three places will be broken by counting the highest throwaway score. If the tie still stands a "sudden death" ~~fly-off~~ **final** must take place within one hour of the end of the scheduled ~~fly-off~~ **final** rounds.

The team classification for World and Continental Championships is established at the end of the competition (after the ~~fly-off~~ **final** flights) by adding together the numerical final placings of the three team members using the full list of competitors unless there is a fourth member of the team (who must always be a junior) in which case it will be the three best placed members. Teams are ranked from the lowest numerical scores to the highest, with complete three-competitor teams ahead of two-competitor teams, which in turn are ranked ahead of one-competitor teams. In case of a tie, the best individual placing decides the team ranking. (Ref: *CIAM General Rules*, C.15.6.2 i))

Reason: The semi final schedule will make F3C more attractive.

c) 5.4.12 Judging **F3 Heli Subcommittee**

Revise the second paragraph in this section as shown below:

5.4.12. Judging

At Continental and World Championships the organiser must appoint a panel of five judges for each round/flight line. When the entry exceeds 55, two flight lines must be used. The judges must be of different nationalities and must be selected from the current CIAM list of international judges. When using two separate panels, the organiser is allowed to use two judges of the same nationality, one on each panel. Those selected must reflect the approximate geographical distribution of teams participating in the previous World Championship with the final list approval by the

CIAM Bureau. At least 20% but not more than 40% of the judges must not have judged at the previous World Championships.

For the preliminary rounds the final score of each flight is obtained by deleting the highest and lowest scores for each manoeuvre from the five judges. **This also applies for semi final and final rounds if only one flight line is used. If two flight lines were used for the preliminary rounds, for** ~~For the fly-off~~ **the final and semi final** rounds ten judges shall be used while dropping the two lowest and two highest scores for each manoeuvre. At Open or other International Competitions the number of judges may be reduced to a minimum of three with no throwaway scores.

Reason: The semi final schedule will make F3C more attractive.

d) 5.4.13 Organisation F3 Heli Subcommittee

Revise the paragraphs as shown below:

FLIGHT ORDER

The flight order for the first preliminary round will be determined by a random draw, taking into account that frequency will not follow frequency and team member will not follow team member of the same team. The flight order for preliminary rounds two, three and four will start at the first, second and third quarter of the initial order. **The flight order for the first semi final round will be established by a random draw. The flight order for the second semi final round will start at the first half of the initial order.** The flight order for the first ~~fly-off~~ **final** round will be established by a random draw. The flight order for the second ~~and third fly-off~~ **final** round~~s~~ will start at the first ~~and second third~~ **half** of the initial order.

PREPARATION TIME

A competitor must be called at least 5 minutes before he is required to enter the start circle. A start circle 2m in diameter will be provided away from the flight line, spectators, competitors and model aircraft (see FIGURE 5.4.A). When the previous competitor's flight time reaches 6 minutes the flight line director can give the signal to start the engine. In the case of electric motors, the battery must not be connected before signal has been given. The competitor is given 5 minutes to start the engine and make last minute adjustments. The model aircraft may only be hovered in the start circle up to 2m and must not be rotated beyond 180º left or right relative to the competitor. If the model aircraft is rotated beyond 180º the flight is terminated. The competitor in the start circle must reduce his engine's speed to an idle when the preceding competitor has completed the **penultimate** ~~eighth~~ manoeuvre. If the competitor is not ready after the 5 minute preparation time, he is allowed to complete his adjustments in the start circle; however, his flight time will have started at the end of the 5 minute interval.

FLIGHT TIME

The flight time of 9 minutes **for the preliminary flights and 8 minutes for semi final and final flights** begins when the competitor's model leaves the start circle with the permission of the flight line director and the judges. If the allotted time expires before a manoeuvre is completed, that manoeuvre and all remaining manoeuvre(s) will be scored zero.

Reason: The semi final schedule will make F3C more attractive.

e) 5.4.14 Manoeuvre Schedules F3 Heli Subcommittee

Revise this sub-paragraph as shown below:

FLIGHT PROGRAM

The flight program consists of manoeuvre schedules P and **SF/**F for the years 20**20**~~16~~ - 20**21**~~17~~. ~~Each~~ **The P** schedule consists of nine (9) manoeuvres **and the SF/F schedule consists of eight (8) manoeuvres** (see ANNEX 5D - F3C MANOEUVRE DESCRIPTIONS).

Reason: The semi final schedule will make F3C more attractive.

f) Annex 5D F3C Manoeuvre Descriptions & Diagrams F3 Heli Subcommittee

Revise paragraph 5D.1 General as shown below:

The manoeuvres are displayed in pictorial form in Figures 5D-P and 5D-**SF/**F for the case where the wind direction is left to right. … In case of a dispute the manoeuvre text takes precedence over Figures 5D-P and 5D-**SF/**F.

Note: When the word “centred” is used, it means that the MA crosses an imaginary plane that extends from a line drawn vertically upward, from the centre judge out through the helipad. This refers to both Schedules P and **SF/**F.

Scoring criteria for landing; See ANNEX 5E paragraph 5E.6.1**1**~~0~~.

Reason: The semi final schedule will make F3C more attractive.

g) Annex 5D F3C Manoeuvre Descriptions & Diagrams F3 Heli Subcommittee

Revise the first paragraph and replace the schedules that follow:

The manoeuvre schedules are listed below with the starting and ending direction (UU = Upwind - Upwind; DD = Downwind - Downwind; DU = Downwind - Upwind; UD = Upwind - Downwind) of each manoeuvre, relative to the wind, as indicated. The competitor has 9 minutes to complete ~~each~~ **the P** schedule **and 8 minutes to complete the SF and the F schedule**. Schedule P will be flown for the preliminary rounds 1 through 4. Schedule **SF/**F will be flown for the **semi final and final** ~~Fly-Off~~ rounds.

SCHEDULE P

P1. **VORTEX**~~FLOWER~~ ……(UU)
P2. **DIAMOND 4**~~CUP~~ ……(UU)
(FLY BY)
P3. DOUBLE CANDLE WITH DESCENDING FLIP …….…….…… (DD)
P4. **LOOP WITH 540° TAIL TURNS**~~PULLBACK WITH 3 HALF LOOPS~~ ……(UU)
P5. UX **WITH PUSHED FLIPS** ……(DD)
P6. OVAL WITH **HALF ROLLS AND**~~TRAVELLING~~ FLIP …… (UU)
P7. OPPOSITE HALF AND FULL INVERTED ROLL ……..(DD)
P8. **INVERTED UMBRELLA**~~LOOP WITH FLIP~~ ……(UU)
(FLY BY)
P9. **180°** AUTOROTATION ~~WITH LOOP~~ ……..(DU)

SCHEDULE **SF/**F

F1. **VERTICAL HOURGLASS WITH PIROUETTES 90°/180°.....……..…**(UU)
F2. **LAID EIGHT WITH PIROUETTES……**.....(UU)
(FLY BY)
F3. **CANDLE WITH 360° TAIL TURN AND 180° PUSHED FLIP……...(UU)**
F4. **DOUBLE CANDLE WITH HALF FLIPS AND HALF ROLLS……...(DD)**
F5. **DOUBLE STALL TURNS WITH HALF ROLLS AND FLIP……..(UU)**
F6. **THREE OPPOSITE ROLLS……(DD)**
F7. **INVERTED UMBRELLA WITH HALF ROLLS……(UU)**
(FLY BY)
F8. **AUTOROTATION WITH FLIP AND TWO 90° TURNS……..(DU)**

Reason: The semi final schedule will make F3C more attractive.

h) Annex 5D F3C Manoeuvre Descriptions & Diagrams F3 Heli Subcommittee

Replace the old P schedule by the new one except the descriptions of P3 and P7. But take care of the Notes of these two manoeuvres:

5D.2 SCHEDULE P

P1: Vortex (UU) K=1.5
MA takes off vertically from the helipad and ascends to 2 m and hovers for a minimum of 2 seconds, ascends flying backwards describing the upper left (right) quarter of a circle with 5 m radius while simultaneously performing a 180° pirouette in any direction and stops over flag 1 (2), hovers for a minimum of 2 seconds and then hovers to the other flag 2 (1) while simultaneously performing two 180° pirouettes that are in opposite direction, stops and hovers over the flag 2 (1) for at least 2 seconds, descends forward describing the upper right (left) quarter of a circle with 5 m radius while simultaneously performing a 180° pirouette in any direction, stops over the center line for at least 2 seconds, descends and lands into the helipad.

P2: Diamond 4 (UU) K=1.5
MA takes off vertically from the helipad and ascends to 2 m while performing simultaneously a 90° pirouette in any direction. It hovers there for at least 2 seconds, ascends 2.5 m in a straight line to any flag while performing a 180° pirouette in any direction and stops for at least 2 seconds. MA ascends 2.5 m in a straight line to 7 m above the center line while performing a 180° pirouette in any direction and stops for at least 2 seconds. MA descends 2.5 m in a straight line to the second flag while performing a 180° pirouette in any direction and stops for at least 2 seconds. MA descends 2.5 m in a straight line to 2 m above the center line while performing a 180° pirouette in any direction and stops for at least 2 seconds. MA descends and lands into the helipad while simultaneously performing a 90° pirouette in opposite direction of the first pirouette.

P3: Double candle with descending flip (DD) K=1.0
MA flies straight and level for a minimum of 10 m and pulls up into a vertical ascent. After a nose up stop MA descends backwards vertically for 2 m minimum performs a half pulled travelling flip, descends vertically for a minimum of 2 m, performs a centered half loop and ascends vertically. After a nose up stop MA descends backwards vertically for 2 m minimum, performs a half pulled travelling flip, descends vertically for 2 m minimum and then pulls into horizontal straight and level flight for a minimum of 10 m.

Note **1**: The 2 flips must be made at the same altitude.
Note 2: The bottom of the half loop must be at the same altitude as when entering the figure.

P4: Loop with 540° Tail Turns (UU) K=1.0
MA flies straight and level for a minimum of 10 m and performs 1 ¼ loop starting from the center line. When reaching half of the height of the former loop MA performs a 540° tail turn in any direction followed by a half loop in opposite direction. When reaching again half of the height of the first loop MA performs a second 540° tail turn in any direction. After MA pulls with quarter loop into horizontal straight and level flight for a minimum of 10 m at the same altitude as when entering the figure.

Note: The tail turns must be executed exactly at half the height of the loop with the MA being precisely vertical.

P5: UX with Pushed Flips (DD) K=1.0
MA flies straight and level for a minimum of 10 m and pulls up into a 45° ascent with a centered half roll in any direction. Once the MA has come to a stop, MA performs a 225° pushed flip, performs a centered 'U', stops, performs a 225° pushed flip, performs a 45° descent with a centered half roll in any direction. MA pulls into horizontal straight and level flight for a minimum of 10 m.

Note 1: The bottom of the 'U' and the rolls must be centered.
Note 2: The bottom of the 'U' must be at the same altitude as when entering the figure.

P6: Oval with ½ Rolls and Flip (UU) K=1.0
MA flies straight and level for a minimum of 10 m and pulls up into a half loop followed by a half roll in any direction, followed by a travelling 360° centered pulled flip and followed by a second half roll in any direction. MA then performs a half positive loop and pulls into horizontal straight and level flight for a minimum of 10 m at the same altitude as when entering the figure.

Note 1: If there is a straight line before the first half roll, there must be the same straight line after the second half roll.
Note 2: If there is a straight line after the first half roll, there must be the same straight line before the second half roll.

P7: Opposite half and full inverted Rolls (DD) K=1.0
MA flies straight and level for a minimum of 10 m and performs a half roll in any direction, flies inverted for a minimum of 1 second, performs a full centered inverted roll in the opposite direction, flies inverted for a minimum of 1 second, performs a half roll in the same direction as the first half roll. MA flies straight and level flight for a minimum of 10 m.

Note **1**: The middle of the manoeuvre must be centered.
Note 2: There is one point deduction per inverted flight section that does not last in minimum 1 second.

P8: Inverted Umbrella (UU) K=1.0
MA flies straight and level for a minimum of 10 m and pulls up into a vertical ascent at center line. After a nose up stop MA performs a half backward loop. After MA stops it performs a centered 'U'. After a nose up stop MA performs a second half backward loop. After a nose down stop MA descends forward vertically on center line followed by a quarter loop and exit after a 10 m straight line at the same altitude as when entering the figure.

Note 1: The quarter loops at the entrance and the exit of the figure and the half loop of the centered 'U' must have the same radius.
Note 2: The two half backward loops must be of equal size and must have half radius than the half loop of the centered 'U'.
Note 3: The bottom of the 'U' must be at the same altitude as when entering the figure

P9: 180° Autorotation (DU) K=1.0
MA flies straight and level for a minimum of 10 m at a minimum altitude of 20 m. Manoeuvre begins when model aircraft crosses an imaginary plane that extends vertically upward from a line drawn from the center judge out through the helipad. MA must be in the autorotation state when it cuts this plane, the engine must be off (or at idle) at this point and the MA must be descending. The 180° turn must start at this point and the turning and descending rate must be constant from this point to a point just before touchdown on the helipad. The flight path of the MA must appear as a semi-circle when viewed from above, starting at the vertical plane and ending at a line drawn from the center judge through the helipad. The MA's flight path must never be parallel to the ground or judge's line.

Scoring criteria for landing: See ANNEX 5E Paragraph 5E.6.11.

Reason: The need for change of manoeuvres.

i) Annex 5D F3C Manoeuvre Descriptions & Diagrams F3 Heli Subcommittee

Replace the old F schedule by the new SF/F schedule.

5D.3 SCHEDULE **SF/**F

F1: Vertical Hourglass with Pirouettes 90°/180° (UU) K=1.5
MA takes off vertically from the helipad and ascends to 2 m, stops and hovers for a minimum of 2 seconds, flies backwards to flag 1 (2) while simultaneously performing a 90° nose in pirouette, stops and hovers for a minimum of 2 seconds. MA ascends sideways to 7 m over flag 2 (1) by a straight line while simultaneously performing two 180° pirouettes that are in opposite direction, stops and hovers for a minimum of 2 seconds. MA flies sideways horizontally back to flag 1 (2) while simultaneously performing two pirouettes 180° that are in opposite direction, stops and hovers for a minimum of 2 seconds. MA descends sideways to 2 m over flag 2 (1) by a straight line while simultaneously performing two 180° pirouettes that are in opposite direction, stops and hovers for a minimum of 2 seconds. MA flies sideways horizontally to the helipad while simultaneously performing a 90° pirouette in opposite direction as the first pirouette, stops and hovers for a minimum of 2 seconds. MA descends and lands into the helipad.

Note: The change of the pirouettes direction must be done smoothly on the center line.

F2: Laid Eight with Pirouettes (UU) K=1.5
MA takes off vertically from the helipad and ascends to 4.5 m while performing simultaneously a 360° pirouette in any direction, then hovers there for at least two seconds. MA flies backwards and descends describing a vertical circle with a radius of 2.5 m while simultaneously performing a 360° pirouette in any direction. MA flies forward and descends describing a vertical circle with a radius of 2.5 m while simultaneously performing a 360° pirouette in the opposite direction, stops and hovers for at least two seconds over the helipad. MA descends and lands into the helipad while simultaneously performing a 360° pirouette in any direction.

Note: The change of direction of the pirouettes must occur smoothly on the center line.

F3: Candle with 360° Tail Turn and 180° pushed Flip (UU) K=1.0
MA flies straight and level for a minimum of 10 m and pulls up into vertical ascent on center line by doing a quarter loop. MA then performs a 360° tail turn, descends minimum 2 m vertically backwards and performs a 180° pushed flip while descending vertically. MA descends minimum 2 m vertically forward, pulls with a quarter loop into horizontal straight and level flight for a minimum of 10 m at the same altitude as when entering the figure.

Note 1: The quarter loops at the entrance and the exit of the figure must have the same radius.
Note 2: The vertical lines before and after the 180° flip must be of equal length.

F4: Double Candle with ½ Flips and ½ Rolls (DD) K=1.0
MA flies straight and level for a minimum of 10 m and performs after crossing the center line a quarter loop and pulls up into a vertical ascent. At the end of the vertical ascent MA performs a 180° pushed flip followed by a recognizable distance of a vertical nose down descend followed by a half roll in any direction. MA performs a half inside loop and pulls up into a vertical ascent. At the end of the vertical ascent MA performs a 180° pulled flip followed by a recognizable distance of a vertical nose down descend followed by a half roll in any direction. MA performs a quarter inside loop which must end at the center line and exit after a 10 m straight line at the same altitude as when entering the figure.

Note 1: The 180° flips and the half rolls must be on the same altitude.
Note 2: The vertical lines before the half rolls must be of equal length.

F5: Double Stall Turns with half Rolls and Flip (UU) K=1.0
MA flies straight and level for a minimum of 10 m and pulls up into vertical ascent on center line by doing a quarter loop. At the end of the ascent MA performs a 180° stall turn followed by a half roll in any direction. MA performs a ¾ inside loop followed by a travelling 360° centered pushed flip and another ¾ inside loop. MA ascents vertically and performs a second 180° stall turn at the end of the ascent followed by a half roll in any direction. MA pulls with a quarter looping into horizontal straight and level flight for a minimum of 10 m at the same altitude as when entering the figure.

Note 1: Before and after the half rolls straight vertical lines are allowed, but they must all be of equal length.
Note 2: Before and after the 360° flip straight horizontal lines are allowed, but they must all be of equal length.

F6: Three opposite Rolls (DD) K=1.0
MA flies straight and level for a minimum of 10 m, performs a roll in any direction followed by a roll in opposite direction followed by a roll in the same direction as the first roll. MA flies straight and level for a minimum of 10 m.

Note 1: During the second roll the MA must be in inverted flight when it crosses the center line.
Note 2: The rolls must be executed one immediately after the other, straight flights between the rolls will be downgraded by one to two points.
Note 3: The elapsed time from the beginning of the first to the end of the third roll must be at least 4 seconds.

F7: Inverted Umbrella with half Rolls (UU) K=1.0
MA flies straight and level for a minimum of 10 m and pulls up into a vertical ascent on center line. After a nose up stop MA performs immediately in a backward vertically flight a half roll in any direction followed by a half backward loop. After MA stops it performs a centered 'U'. After a nose up stop MA performs a half backward loop followed by a backwards vertically ascent. After a nose down stop MA performs immediately in a forward vertically flight a half roll in any direction followed by a vertical descent. MA pulls with a quarter looping into horizontal straight and level flight for a minimum of 10 m at the same altitude as when entering the figure.

Note 1: The quarter loops at the entrance and the exit of the figure and the half loop of the centered 'U' must have the same radius.
Note 2: The two half backward loops must be of equal size and must have half radius than the half loop of the centered 'U'.
Note 3: The bottom of the 'U' must be at the same altitude as when entering the figure.
Note 4: The two rolls must be performed at the same altitude.

F8: Autorotation with Flip and two 90° Turns (DU) K=1.0
MA flies straight and level flight for a minimum of 10 m performs a pulled 360° flip in horizontal movement, flies horizontal straight and level for a maximum of 10 m and turns off the engine (or at idle) during this straight flight period, just before reaching the center line. MA executes 3 constantly descending sides with two 90° turns in the direction of the pilot and lands against the wind into the helipad.
Note 1: The descent rate must be constant to a point just before touchdown on the helipad.
Note 2: Parts of the second side, the second 90° turn and the beginning of the third side may be flown out of the 60° flight window.

Scoring criteria for landing: See ANNEX 5E Paragraph 5E.6.11.

Reason: The need for change of manoeuvres.

F3N

j) Annex 5F F3N Manoeuvre Descriptions & Diagrams F3 Heli Subcommittee

In 5F.1 F3N Set Manoeuvre Descriptions:

Change k-factor of manoeuvre 1.5 "Inverted horizontal eight".
Replace manoeuvre 1.10 "Backward loop" by the new manoeuvre "Standing 8".
Replace manoeuvre 1.11 "4-point roll backwards" by the new manoeuvre "Spike".
Replace manoeuvre 1.16 "Snake" by the new manoeuvre "Tumbling circuit".
Change k-factor of manoeuvre 1.17 "Triple pirouetting flip".
Rewrite manoeuvre 1.28 "Funnel with half rolls".
Change k-factor of manoeuvre 1.29 "Pirorainbow X reversal".
Replace manoeuvre 1.30 "Piro globe reversal" by the new manoeuvre "Vertical Tic Toc eight":

1.5 Inverted horizontal eight K=~~5~~**6**.0
MA enters in inverted forward flight parallel to the judges' line, performs a 90°-turn to a straight flight above the centre line and then performs a horizontal eight, consisting of two 360° circles.

The manoeuvre is not intended as a hover manoeuvre. In case of low flying speed and banking angle less than 45deg, a maximum of 15 points can be given.

1.10 Standing 8 K=8.0
MA enters in forward upright flight parallel to judge line. After passing centerline, MA performs half inside loop, followed by half outside loop. MA is now at the top of the standing 8 on the centerline, and performs fast half pirouette. MA now performs half outside backwards loop, followed by half inside backwards loop. MA is now back to starting point on centerline, and exits in backwards upright flight. All loop segments must have same radius.

1.11 Spike K=7.0
MA enters in upright forward flight. MA performs a half 2-point roll, followed by minimum 10m inverted flight. MA then performs ¼ outside loop and ascents vertically. MA then descents vertically and performs ¼ inside backwards loop with same radius as before, followed by minimum 10m upright backwards flight. MA then performs half 2-point roll, and exits in backward inverted flight on the same line as the manoeuvre was started.

1.16 Tumbling Circuit K=8.0
MA enters in backwards upright flight parallel to judge line. Before passing centerline MA performs ¼ backward inside loop, which stops on the centerline. MA then completes a horizontal circle while doing sequence of half forward outside loops and half backward inside loops. Circle must include 4 of those sequences. When passing centerline again, MA performs ¼ forward outside loop, and exits in forward inverted flight on same line as manoeuvre was started.

1.17 Triple pirouetting flip K=~~8.0~~**7.5**
MA hovers and then starts pirouetting. At the same time or after one pirouette the MA starts to flip three times while it continues to perform pirouettes. There should be at least one pirouette during each 360° flip (2 pirouettes are shown in the drawing). Both rotations should have a constant rate and the MA maintains its position during the manoeuvre.

1.28 Funnel with half rolls K=9.5
MA enters in inverted flight and performs a quarter pirouette. MA then performs three superimposed circles in lateral inverted flight with the rotor disk tilt at least 45 degree from a horizontal plane. After each half funnel except the last the MA performs a half roll. After three funnels (and five half rolls) the MA exits in upright flight. The diameter of the circles should be at least 10 meters. **For all the half rolls, MA rotordisc should be vertical when passing centerline.**

1.29 Pirorainbow X reversal K=11.~~5~~**0**
MA hovers over the centre line with an angle of 45°, then enters the manoeuvre with a rainbow, a not stationary flip that follows an arched flight path of at least 10 meters length. During the rainbow the MA performs one pirouette in each direction, with the reverse on the top of the rainbow. Then another rainbow (with pirouette reversal) leads back to the starting point. MA then continues with these rainbows alternately about the longitudinal and the lateral axis, until the four outer points of an X (viewed from above) are reached and MA hovers where it started the manoeuvre. MA does

not perform any part of pirouettes, when hovering in the centre. During the stops at the four outer points, rotor disk must be horizontal but there should be no hovering.

1.30 Vertical Tic Toc Eight K=10.5
MA enters in upright forward flight and performs a quarter roll to knife edge tic-tocs. Model then performs a half tic-toc loop. On the top of the loop MA performs a half pirouette, and then continues up with another half tic-toc loop while keeping the tail in the flight direction. On top of this second circle MA performs a half roll. It completes the upper tic-toc loop with the tail in the flight direction. It then performs another half pirouette and completes the lower tic-toc loop with the nose in the flight direction. Model exists in upright forward flight.
During the manoeuvre the longitudinal axis of the model always follows the flight path.

Reason: New manoeuvres and redefined k-factors because of changing requirements in the class F3N.

k) Annex 5F.2 F3N Set Manoeuvre Drawings F3 Heli Subcommittee

*Replace all drawings. Refer to **Annex 7e**.*

Reason: New manoeuvres and redefined k-factors because of changing requirements in the class F3N.

Volume F3 Pylon begins overleaf

15.7 Section 4C Volume F3 - RC Pylon

a) 5.2.3 Noise rules **F3 Pylon Subcommittee**

Revise paragraph 5.2.3 as shown below:

5.2.3 Noise rules

(a) The engine(s) shall be fitted with an ~~homologated~~ exhaust system as described in Annex 5P.

(b) ~~The competitor is permitted to use a different secondary exhaust system. In that case~~ **A** test will be carried out on ~~his~~ **the** exhaust system**(s)** ~~or on the noise emission of his model aircraft~~ during the processing and at the request of the Technical Officer after a race. **The test procedure is described in Annex 5P.**

Reason: Bringing the rules in line with the practice of using the noise rules in the last 8 years. Note: Annex 5P is to be replaced by the text in the following proposal.

b) Annex 5P Noise Rules **F3 Pylon Subcommittee**

*Replace Annex 5P. Refer to **Annex 7f** for the new text and drawings:*

Reason: Bringing the rules in line with the practice of using the noise rules in the last 8 years.

c) 5.2.14 ~~Transmitter and frequency check~~ Radio equipment
F3 Pylon Subcommittee

Change the name of the paragraph to Radio equipment

Add a sub-paragraph 5.2.14 d) as shown below:

The radio equipment shall be of the open loop type (i.e. no automated electronic feedback to the control surfaces either internally or from the model aircraft to the ground except for the stipulations in CIAM General Rules C.16.2.3).
Systems or components which can move control surfaces of the aircraft or which can move masses in the aircraft based on input other than pilot input from their transmitter are not allowed to be installed in the aircraft.

Permitted:

1. **Control rate devices that are manually switched by the pilot.**
2. **Any type of transmitter button or lever, switch, or dial control that is initiated or activated and terminated by the competitor.**
3. **Manually operated switches or programmable options to couple and mix control functions.**
4. **Devices for position tracking solely for the purpose of an automated tracking and scoring system for the competition event.**

Not permitted:

Any system that can move the control surfaces without direct pilot input in response to other inputs, like:

1. **Pre-programming devices to automatically perform a series of commands.**
2. **Auto-pilots or gyros for automatic stabilisation of the model aircraft, whether separate devices or integrated into the radio receiver or servos.**
3. **Automatic flight path guidance.**
4. **Any type of learning function involving manoeuvre to manoeuvre or flight to flight analysis.**
5. **Terrestial reference systems like GPS which can notify the pilot through telemetry when their plane reaches a specified distance away.**

Reason: There is an almost general opinion in the pylon racing community that pylon racing should be about pilot's skills, not about systems for (semi-)automatic airplane control.

d) 5.2.11 Technical checks and safety requirements F3 Pylon Subcommittee

Revise sub-paragraph 5.2.11 d) with the addition of text as shown below:

d) If the model aircraft is not according to the technical specifications in 5.2.2– 5.2.11 **or does not meet the requirements for the radio equipment in 5.2.14.d)**, the competitor shall be disqualified from the competition.

Reason: Consequential change of the addition of the rule to disallow any kind of automatic control.

Volume F3 Soaring begins overleaf

15.8 Section 4C Volume F3 - RC Soaring

F3B – RC Multi-Task Gliders

a) 5.3.1.3 Characteristics of Radio Controlled Gliders F3B Germany

Delete the former sub-paragraph d) and replace with new text as follows:

~~d) Any transmission of information from the model aircraft to the competitor is prohibited, with the exception of signal strength and voltage of the receiver battery. Any use of telecommunication devices (including transceivers and telephones) in the field to communicate with competitors, their helpers or team managers while doing the competition task is not allowed.~~

d) The use of any onboard-sensed data to automatically move the control surfaces or to modify the aircraft geometry is prohibited.
Any technological device used to aide in supplying data of the air's condition or direct feedback of the model's flight status is prohibited during the flight. These devices include any transmission or receiving devices not used to directly control the model aircraft (telephones, walkie-talkies, telemetry of airspeed and altitude etc.), temperature detecting devices (thermal imaging cameras, thermometers etc), optical aids (such as binoculars, telescopes etc.), and distance/altitude measuring devices (GNSS, laser range finders etc.).Telemetry of signal strength at the aircraft receiver and state of the receiver battery is permitted. Use of corrective eyeglasses and sunglasses are permitted. If an infringement of this rule occurs, the pilot will be disqualified from the contest.

Reason: This change was decided 2013 for F3B, but the change appeared first for F3J and F3F and not for F3B for what reasons ever; for F3F it makes no sense at all. It is part of the F3J-rules 2018; therefore it makes sense to transfer it also to F3B, because these two classes are very similar concerning the characteristics.

b) 5.3.1.3 Characteristics of Radio Controlled Gliders F3B Germany

Modify the sub-paragraph e) in 5.3.1.3, with the additional words as shown below:

e) The competitor may use a maximum of three (3) model aircraft in the contest. All exchangeable parts (wing, fuselage, **canopy**, tail planes, **joiner**, **etc.**) must be marked uniquely and in a way that does not allow replication of this mark on additional parts.

Reason: The listing of the exchangeable parts should be more detailed and not absolutely fixed; therefore additionally "etc.". For example, the canopy was not listed, because when the rule was created there was no construction with a removable canopy.

c) 5.3.1.3 Characteristics of Radio Controlled Gliders F3B Germany

Delete the former sub-paragraph g) and replace with new text as follows:

~~g) For the sake of randomness of the starting order among the successive rounds, each competitor must enter three (3) different frequencies. The competitor can be called to use any of these frequencies during the contest, so long as the call is made at least 1/2 hour prior to the beginning of a round and in written form to the affected team manager.~~

g) The use of turbulators to influence the air flow at the wings is forbidden.

Reason: The old paragraph g) is no more necessary because of the new radios at 2.4 GHz.

If the use of turbulators is not forbidden then it´s allowed; this means if any pilot uses turbulator(s) it must be controlled that the type and the position of the turbulator(s) is the same for each task of a round. This is not practicable because the position of the turbulator(s) for each task must be documented, and afterwards matched that there will be no change of the position for the new task; this is very difficult and therefore time-consuming.

d) 5.3.1.5. Definition of an Attempt Germany

Modify sub-paragraph e) as shown below:

e) In case of additional attempts in task A (Duration) during a round or task B (Distance) during a round, the competitors entitled to that additional attempt must fly within a group that is not complete in number or in one or more groups newly formed. If this is not possible ~~due to a clash of frequencies~~, those entitled to another flight fly within their original group once more. The better of the two results will be the official score except for those competitors who are flying the additional attempt. For those the result of the repetition is the official score.

Reason:
With the new radios at 2,4 GHz there is no clash of frequencies possible; therefore it´s no more necessary to fly a complete group again.

e) 5.3.1.5. Definition of an Attempt Germany

Modify sub-paragraphs b) and c) in this section as shown below:

b) The competitor is entitled to a new working time period if any of the following conditions occur and are duly witnessed by an official of the contest:

i) his model aircraft in flight collides with another model aircraft in flight, or another model aircraft in the process of launch (released for flight by the competitor or his helper) or, with a launch cable during the process of launching. ~~Should the flight continue in a normal manner, the competitor may demand that the flight in progress be accepted as official, even if the demand is made at the end of the original working time~~

ii) his model aircraft or launch cable in the process of launch collides with another model aircraft or launch cable also in the process of launch (released for flight by the competitor or his helper), or with another model aircraft in flight. ~~Should the flight continue in a normal manner, the competitor may demand that the flight in progress be accepted as official, even if the demand is made at the end of the original working time~~

iii) his launch cable is crossed or fouled by that of another competitor at the point of launch of his model aircraft (released for flight by the competitor or his helper).

To claim a re-flight in the cases i) to iii) the competitor must land his model as soon as possible after the collision. If the competitor continues his flight, he has waived his right for a new working time.

iv) the flight has not been judged by the fault of the judges or timekeepers.

v) in the case of an unexpected event, outside the competitor's control, the flight has been hindered or aborted.

~~c) For all cases described above the competitor may demand that the flight in progress in which the event occurred will be accepted as official. Note is made that in the event the competitor continues to launch or does a re-launch after clearing of the hindering condition(s) he is deemed to waive his right to a new working time.~~

c) **If** the competitor continues **to fly or continues** to launch or **he** does a re-launch, ~~after clearing of the hindering condition(s) he is deemed to~~ **he has** waive**d** his right ~~to~~ **for** a new working time.

Reason: If the competitor knows his result the decision is easy but not fair. If the result is not fine he will always decide that the collision was the reason for it even if the collision was harmless and there no marks on his model.

f) 5.3.2.1. Definition **Germany**

Modify sub-paragraph b) as shown below:

b) The combination of task A, B and C constitutes a round. A minimum of ~~two rounds~~ **one (1) round and one (1) task must be flown that the competition is valid.** ~~Except at World and Continental Championships the last round may be incomplete, i.e. only one task or any combination of two tasks. In the case of a~~ **The result of a** World or **Continental** Championship~~s each competitor is entitled a minimum of five rounds subject to the provision of rule B.13, Section 4B.~~ **is valid if five (5) complete rounds are flown; if more than five (5) complete rounds are flown, see paragraph 5.3.2.8. Classification.** At the discretion of the ~~organiser~~ **contest director** any task may be flown first in a scheduled round.

Reason: The actual wording of paragraph b) is too complicated to be understood by everybody. Therefore it should be clearly pointed out that the minimum of one (1) round and one (1) task is enough that a competition can be counted. The minimum of five complete rounds are necessary for a valid World or Continental Championship.

g) 5.3.2.3. Task A - Duration **Germany**

Modify sub-paragraph e) as shown below:

e) ~~For model still in the air~~ **If the model has not come to rest** when the twelve (12) minutes expire, the elapsed flight time only will be taken into consideration for scoring, without any additional points for the precision of landing.

Reason: The existing wording is wrong since a very long time, because from the beginning of F3B, the time for the task A-Duration ends when the model has come to rest.

h) 5.3.2.3. Task A - Duration **Germany**

Modify sub-paragraph b) as shown below:

b) One point will be awarded for each full second from the time the model aircraft is free flying to the time the model aircraft comes to rest ~~on the defined landing area~~ **on the defined flying site**, up to a maximum of 600 points (i.e. 10 minutes maximum), for each full second of flight within the working time; if the model does not land on ~~the defined landing area~~ **the defined flying site** ~~the flight will be penalised with 100 points~~ **the whole flight is zero.** No points will be awarded for flight time in excess of working time. The free flying of the model aircraft commences when the model aircraft is released from the towline.

Reason: Normally the model lands on the defined flying site because the landing spots are in this area. If for whatever reason, the model lands outside the defined flying site the result of this flight must be zero. A radio controlled model must come back to the area from where it has been started.

Two years ago it was a mistake from the German NAC to change the primary rule proposal from zero to 100 points penalty.

For duration it can lead to a negative result if the model landed far away and there is no flight-time available.

Compare the rules of other soaring classes with a comparable or equal intention.

F3J 5.6.5.1 - e) The flight is cancelled and recorded as a zero score if, during landing, some part of the model aircraft does not come to rest within 75 metres of the centre of the competitor's designated landing circle.

F3K 5.7.3. - Definition of the flying field.

i) 5.3.2.4. Task B - Distance **Germany**

Modify sub-paragraph f) as shown below:

f) After having completed the task, the model aircraft must land on ~~the defined landing area~~ **the defined flying site** otherwise the flight ~~will be penalised with 100 points~~ **is zero**. ~~The penalty of 100 points will be a deduction from the competitor's final score and shall be listed on the score sheet of the round in which the penalisation was applied.~~

Reason: The model must land on the defined flying site from where it has been started. If for whatever reason, the model lands outside the defined flying site the result of this flight must be zero. A radio controlled model must come back to the area from where it has been started.

Two years ago it was a mistake from the German NAC to change the primary rule proposal from zero to 100 points penalty. Please note the same supporting data for the previous proposal, which compares the rules for comparable classes.

j) 5.3.2.5. Task C - Speed **Germany**

Modify sub-paragraph f) as shown below:

f) After having completed the task, the model aircraft must land on ~~the defined landing area~~ **the defined flying site** otherwise the flight ~~will be penalised with 100 points~~ **is zero**. ~~The penalty of 100 points will be a deduction from the competitor's final score and shall be listed on the score sheet of the round in which the penalisation was applied.~~

Reason: The model must land on the defined flying site from where it has been started. If for whatever reason, the model lands outside the defined flying site the result of this flight must be zero.

A radio controlled model must come back to the area from where it has been started.

Two years ago it was a mistake from the German NAC to change the primary rule proposal from zero to 100 points penalty.

Please note the same supporting data for the previous proposals, which compares the rules for comparable classes.

k) 5.3.2.5. Task C - Speed **Germany**

Modify sub-paragraph h) with the additional words as shown below:

h)……
The flight will be penalised with 300 points, when sighted by means of an optical aid, the safety plane is crossed or **multiple crossed** by any part of the **intact** model aircraft. The instrument used to check the crossing of the vertical safety plane must also assure that the safety plane is orthogonal to Base A and Base B. The penalty of 300 points will be a deduction from the competitor's final score and shall be listed on the score sheet of the round in which the penalisation was applied.

Reason: It can happen that the model crosses the safety-plane not only one time but several times; this should only penalized one time.

If the model was crashed for what reason ever and parts of the model cross the safety-plane this should not be penalized.

l) 5.3.2.8. Classification **Germany**

Modify the paragraph as shown below:

If only five (5) rounds are flown, the competitor's classification is determined by the sum of all Total Scores for each round. If more than five (5) complete rounds are flown the lowest partial score of each task with more than five (5) results is omitted from the sum of all partial scores. To decide the winner when there is a tie, the two (2) (or all who have the equal score) competitors will fly an additional round (~~three (3) tasks~~ **duration, distance and speed**).

Reason: Clearer wording.

m) 5.4. Class E F3B – Multi-Task Gliders with Electric Motor Germany

New *program for F3B with an alternative launch method using an in-built electric motor. See* ***Annex 7g*** *for the complete section text.*

Reason: The serious decrease of the number of competitors at F3B-competitions in the past years shows that the interest for F3B declines. I am sure that there are a number of reasons which are responsible for this development:

At one side the elders stop competing because the complicated circumstances with the winch-equipment and there are no youngsters at all to fill this gap.

This situation leads to the fact that the number of competitors at the individual competitions declines and the organizers have potentially a financial deficit.

This happened this year and a popular organizer has retired; hopefully he will return in 2019.

We are in a vicious circle which can only be broken by a bigger number of competitors; an increase of the entry-fee could be an interim solution to keep the existing organizers at it.

The only short term solution, whatever this means, to solve this problem is the step to launch an additional program with F3B-model with electric motor for the launch instead of the winch.

This program is formulated in that way, that both classes F3B and E F3B can be flown at one competition in different groups with a separate ranking.

With this approach we can use the complex F3B-infrastructure for more pilots.

With this approach it could be possible to keep the number of competitors like it is or to get a slightly increase by returnees and / or by newcomers.

This year at the “42. Oktoberfestpokal” in Munich there was first time a group of eight “electric pilots” at a FAI-World Cup competition F3B.

We should install this class as a provisional class, that an organizer of a F3B competition can additional announce the class E F3B for interested pilots.

Supporting Data:

Advantages of E F3B:

- More effective training because no set-up and dismounting of winches and therefore nearly no waste of time.
- Training on smaller flying field possible
- Contests on smaller flying field possible (not in combination with F3B) and perhaps new organizers in the near future.
- Reduction of the transport volume; the transport mass and therefore the transport cost (more pilots in a car); at least less ecological damage.
- **At the first time E F3B should be no replacement of F3B but a supplement.**

F3K – Hand Launch Gliders

n) 5.7.4.2. Mid air collision Switzerland

Amend the paragraph with additional text as shown below:

5.7.4.2. Mid-air collision

In cases of mid-air collisions of two or more model gliders **in flight** the competitors will not be granted reflights, nor will penalties be levied. **However, affected competitors are entitled to a new working time if their models collide while one of the models is in the start phase.**

The start phase is defined by the moment when the pilot releases his model glider, until it reaches the highest point.

Reason: We would like to put the drop up to 12 rounds.
In the above situation, it's necessary to get a reflight when a model glider is involved in a crash during the start phase. This is the only part of the flight when a crash cannot be prevented.
This rule change is proposed by a group of some active international top pilots.

o) 5.7.7. Flight time — Switzerland

Amend this paragraph as shown below:

5.7.7. Flight time

The flight time is measured from the moment the model glider leaves the hands of the competitor until a landing of the model glider as defined in 5.7.6. or until the working time expires.

The flight time ~~is measured in full seconds.~~ **shall be recorded to 0.1 seconds.** Rounding up is not applied.

The flight time is official when:

The launch happened from inside the start and landing field and the landing is valid according to 5.7.6. and when the launch happened within the working time of the task.

This means that if the airplane is launched before the beginning of the working time, then that flight receives a zero score.

~~In those tasks, where maximum or target flight times are specified, the flight time is scored up to this maximum or target flight time only. The sum of all flight times per task must not be greater than the working time minus the number of scored flights in seconds.~~

Reasons: It's necessary to stop the time in tenths of a second, because the full seconds are not accurate enough. Many pilots lose contests because the timer records 1.59.9 for example, instead of the needed 2:00.0.

Of course, not everybody can stop 100% accurately the right time. But if in this case the correct time would be 1:59.9, and you have a slow timekeeper, he will stop 2:00.0 and the pilot gets a full second more compared to the pilot with a fast timekeeper. With the new rule, the difference will be just 0.1sec.

Therefore, at contests with official timekeepers it happened often that the helper of the pilot stopped 2:00.0 for example, and the official timekeeper recorded 1:59.9.

In this case the pilot loses a full second and not just 0.1sec.

Considering this, time taking will be more exact, even if the timekeeper can't always get the 100% correct time. We also found in all the years with official time keepers that very often the helper and the official measured exactly the same time.

It does make sense to stop the time in tenths of a second.

With the above proposal, the following rule is obsolete: ~~In those tasks, where maximum or target flight times are specified, the flight time is scored up to this maximum or target flight time only. The sum of all flight times per task must not be greater than the working time minus the number of scored flights in seconds.~~

This rule just made the top score way closer.

This rule change is proposed by a group of a few active international top pilots.

p) 5.7.9.4. Preparation time **Denmark**

Amend the third sub-paragraph as shown:

5.7.9.4. Preparation time

For each round, the competitors receive at least 5 minutes of preparation time. This preparation time should ideally start 3 minutes before the end of the working time of the previous group (or at the beginning of the last flight attempt in Task C (All up) of the previous group), in order to save time.

At the beginning of a preparation time, the organisers must call the names and/or starting numbers of the competitors flying in the next group.

Before each ~~flight attempt of Task C (All up)~~ **working time** there must be ~~an~~ **a** ~~additional~~ preparation time period of 60 seconds when flying is not allowed. ~~(see Task C description in 5.7.11.3)~~

Reason: The reason is to make it mandatory to have a 1 min preparation time on ground before the working time. The reason is to harden the beginning of the task in that you can't scout the air and find good air flying just before the beginning of the working time. It has been in the rules as a possibility and many pilots would like it to be mandatory.

This change was proposed by the f3k working group (founded in 2015 during the F3K WC in Croatia) and unanimously agreed on at the technical meeting in 2017 at the F3K WC in Ukraine.

It has been discussed in many forums and the consensus is positive among pilots.

This change doesn't remove the test flying and therefore there will not be any danger from launching untrimmed (or de-trimmed?) models.

q) 5.7.9.5. Testing time **Denmark**

Amend the second paragraph as shown below:

5.7.9.5.Flight testing time

After all the model gliders of the previous group have landed, the competitors flying in the next group receive at least 1 minute of flight testing time, which is part of the preparation time. During this flight testing time the competitors are allowed to perform test flights from the start and landing field.

~~Each competitor has to ensure that he is finished in time with his test flights and is ready to start when the working time of the group begins.~~ The last 5 seconds before the start of the working time **and before the end of the testing time** have to be announced by the organiser. **The first moment, at which the acoustic signal can be heard, defines the start and end of the testing time.**

A competitor will receive a penalty of 100 points if he starts or flies his model glider outside of the testing time, working time or landing window of his assigned group.

Competitors may test fly before the transmitter impound and after the last working time of the day

Reason:

a) The advice in the second paragraph is unnecessary in the rules, since they are rules and not guidelines.

b) The reason follows the proposal to make the “preparation time on ground” before the working time mandatory. This calls for the addition of a count down before the end of the test flying time and before the preparation time where flying is prohibited.

This change follows the proposal that was proposed by the f3k working group (founded in 2015 during the F3K WC in Croatia) and unanimously agreed on at the technical meeting in 2017 at the F3K WC in Ukraine.

It has been discussed in many forums and the consensus is positive among pilots.

r) 5.7.9.5. Testing time **Switzerland**

Amend the first paragraph as shown below:

5.7.9.5. Flight testing time

After all the model gliders of the previous group have landed, the competitors flying in the next group receive ~~at least 1 minute~~ **30 seconds** of flight testing time, which is part of the preparation time. During this flight testing time the competitors are allowed to perform test flights from the start and landing field.

Reason: The pilots won’t have the chance to look for good air during testing time, but still have the chance to test their glider before the working time.

30 seconds is enough for testing the glider, but not long enough for searching for good air.

The skill of “reading the air” gets way more important.

This rule change is proposed by a group of some active international top pilots.

s) 5.7.10.1. Final score **Switzerland**

Amend the second paragraph as shown below:

5.7.10.1. Final score

The final score is the sum of the normalised scores of all rounds minus penalty points.

If ~~five (5)~~ **twelve (12)** or more rounds are flown then the lowest score is dropped.

The penalty points will be a deduction from the competitor's final score and shall be listed on the score sheet of the round in which the penalisation was applied.

The penalty points are retained even if the score of the round in which the offence occurred is dropped.

Reason: This proposal changes the flying tactics. The score in the top positions results in bigger differences.

Presently many contest wins are defined by the drop.

The pilots today don't need the drop for technical problems with the model glider or the radio. The gear is pretty reliable and problems during the contest can be avoided.

For contests like the World Championships or European Championships a drop makes sense, for example if a pilot is involved in a mid-air collision and loses this flight because of this.

This rule change is proposed by a group of some active international top pilots.

t) 5.7.10.3. Fly-off **Denmark**

Amend the paragraph with an additional sentence as shown below:

5.7.10.3. Fly-off

The organiser may announce a fly-off prior to the beginning of the event. For World and Continental Championships, the fly-off is mandatory for seniors. The fly-off should consist of at least three (3) rounds with a maximum of six (6) rounds. If less then three (3) fly-off rounds can be completed, the result of the preliminary rounds determine the final ranking.

Fly-off tasks must all be included in the Fly-off and if more tasks are flown in the Fly-off, the rest of the tasks must be used.

A junior fly-off may be held with the maximum number of competitors being 2/3 of the seniors fly-off. A separate junior fly-off is not mandatory.

If a fly-off is flown, the points (including penalties) of the previous rounds are not considered.

Reason: This follows the proposals of Fly-off tasks with 15 minutes working time.

This change was proposed by the f3k working group (founded in 2015 during the F3K WC in Croatia) and agreed on with majority at the technical meeting in 2017 at the F3K WC in Ukraine.

u) 5.7.11.4 Task D (Increasing time by 15 seconds) **Denmark**

Replace Task D:

~~Task D (Increasing time by 15 seconds)~~
~~Each competitor has an unlimited number of flights for each target flight time. Each competitor must try to complete the first flight of 30 seconds or more. Once this is accomplished, each of the next target flight times must be incremented by 15~~

~~seconds therefore flight times should be equal to or more than: 30 s; 45 s; 60 s;75 s; 90 s; 105 s; 120 s. The longest target flight time is 120 seconds.~~
~~The time of all the achieved target flight times is taken into account for scoring.~~

~~Working time is 10 minutes.~~

~~Example: 1st flight 32 s target time of 30 seconds is achieved; flight score is 30 points.~~
~~The next target flight is 45 seconds.~~
~~2nd flight 38 s 45 seconds not reached, score 0~~
~~3rd flight 42 s 45 seconds not reached, score 0~~
~~4th flight 47 s target time of 45 seconds is achieved; flight score is 45 points; partial score is: 30 + 45 points. The next target flight is 60 seconds~~
~~5th flight 81 s target time of 60 seconds is achieved; flight score is 60 points.~~
~~The next target flight should be 75 seconds but the remaining working time is only 65seconds therefore the next target flight cannot take place.~~

~~The total score for the task is: 30+45+60 = 135 points~~

Task G (Two longest flights) Each competitor has an unlimited number of flights. Only the best two flights will be added together. The maximum accounted single flight time is 300 seconds. Working time is 10 minutes.

Reason: This change was proposed by the f3k working group (founded in 2015 during the F3K WC in Croatia), other forums and in principle agreed on at the technical meeting in 2017 at the F3K WC in Ukraine in the pursuit of harder tasks.

This replacement also follows a general wish among pilots to get rid of the task "Ladder" as a threshold-task, since the difference in flight time of the last flights can yield a large difference in scoring.

*Technical Secretary Note: This proposal is inserted as it was received. It could be assumed that the intention is for Task D to be replaced by Task G (Two longest flights), but that was not in bold or underlined. If that is the correct assumption, then it cannot be Task '**G'** as that task already exists; it must be a new Task D.*

v) 5.7.11.5. Task E (Poker – variable target time) Switzerland

Amend the first sub-paragraph as shown below, with consequential changes in sub-paragraph 5 and the example as follows:

5.7.11.5. Task E (Poker - variable target time)

Each competitor has an unlimited number of flights to achieve or exceed up to ~~five~~ **three (3)** target times. Before the first launch of a new target, each competitor announces a target time to the official timekeeper. He can then perform an unlimited number of launches to reach or exceed, this time.

…

The target(s) (1 – ~~5~~ **3**) with achieved target times are scored. The achieved target times are added together.

…

Example: Announced time Flight time Scored time

45 s	1st flight 46 s	45 s
50 s	1st flight 48 s	0 s
	2nd flight 52 s	50 s
47 s	1st flight 49 s	47 s
~~60 s~~	~~1st flight 57 s~~	~~0 s~~
	~~2nd flight 63 s~~	~~60 s~~
~~60 s~~	~~1st flight 65 s~~	~~60 s~~

Total score is ~~262 s~~ **142s**

Reason: Many pilots chose the easy way and fly 5 times 2min which is achievable in most of the conditions. With three flights only, they can't do this anymore, which makes the task more challenging.

This rule change is proposed by a group of some active international top pilots.

w) 5.7.11.12 (new paragraph) Denmark

Add a new task (Task L) as shown below:

5.7.11.12 Task L (One flight)

During the working time, the competitor may launch his model glider one time. The maximum accounted flight time is 359 s.

The competitor is not allowed any help during the flight testing time, working time or landing window.

Working time is 10 minutes.

Reason: This change was proposed by the f3k working group (founded in 2015 during the F3K WC in Croatia) and agreed on with majority at the technical meeting in 2017 at the F3K WC in Ukraine and in other forums, in the pursuit of harder tasks to give better separation. The choice of different working times follows the principles of rule 5.7.11.1. The maximum accounted flight time follows 5.7.7.

x) 5.7.11.12 (new paragraph) Switzerland

Add a new task (Task L) as shown below:

5.7.11.12 Task L (One flight)

During the working time, the competitor may launch his model glider one single time. The maximum flight time is limited to 599 seconds (9 minutes 59 seconds).

Working time is 10 minutes.

Reason: The task sounds quite easy, but it's hard to decide whether to start immediately or wait for better air to make longer thermal conditions.

A helper is needed to support the pilot during his flight. In good conditions the pilot might fly the 10min, which means he has to keep to the bubble over a long distance. In this case the pilot starts to follow the glider to see it better. The helper can guide him to find a safe way back to the field in time.

Another reason for appointing a helper is to make F3K attractive for newcomers or the average pilot. It is pretty hard to successfully complete this task if you are alone on the field without any help at all.

This change was proposed by the F3K working group (founded in 2015 during the F3K WC in Croatia) and agreed on with majority at the technical meeting in 2017 at the F3K WC in Ukraine and in other forums, in the pursuit of harder tasks to give better separation.

y) 5.7.11.13 (new paragraph) Denmark

Add a new task (Task M) as shown below:

5.7.11.13 Fly-off Task M (Increasing time by 2 minutes "Huge Ladder")

Each competitor must launch his/her model glider exactly three (3) times to achieve three (3) target times as follows: 3:00 (180 seconds), 5:00 (300 seconds), 7:00 (420 seconds). The targets must be flown in the increasing order as specified. The actual times of each flight up to (not exceeding) the target time will be added up and used as the final score for the task. The competitors do not have to reach or exceed the target times to count each flight time.

Working time is 15 minutes.

Reason: This change was proposed by the f3k working group (founded in 2015 during the F3K WC in Croatia) and longer Fly-off tasks were agreed on with majority at the technical meeting in 2017 at the F3K WC in Ukraine, in the pursuit of harder tasks to give better separation especially in the Fly-off.

z) 5.7.11.13 (new paragraph) Switzerland

Add a new task (Task M) as shown below:

Task M (Two longest flights, max 5min, two launches only)

Each competitor is limited to two (2) flights only. The two flight times will be added together. The maximum accounted single flight time is 300 seconds.

Working time is 10 minutes.

Reason: This task is a combination between turnaround and long flying time.
Each competitor has to achieve two times 5min consecutively.
With two launches only, the pilot can't try again with a restart and has to accept the present conditions.

This change was proposed by the F3K working group (founded in 2015 during the F3K WC in Croatia) and agreed upon with majority at the technical meeting in 2017 at the F3K WC in Ukraine and in other forums, in order to obtain more demanding tasks to achieve better separation.

aa) 5.7.11.14 (new paragraph) Denmark

Add a new task (Task N) as shown below:

5.7.11.14 Fly-off Task N (Poker - variable target time)

Each competitor has an unlimited number of flights to achieve or exceed up to 3 target times.

Before the first launch of a new target, each competitor announces a target time to the official timekeeper. He can then perform an unlimited number of launches to reach or exceed, this time.

If the target is reached or exceeded, then the target time is credited and the competitor can announce the next target time, which may be lower, equal or higher, before he releases the model glider during the launch.

If the target time is not reached, the announced target flight time cannot be changed. The competitor may try to reach the announced target flight time until the end of the working time. For the competitors last flight he may announce "end of working time". For this specific call, the competitor has ONLY one attempt.

The target time must be announced clearly in the official contest language or alternatively shown to the timekeeper in written numbers (e g 5:38) by the competitor's helper immediately after the launch. If the competitor calls "end of working time" the competitor's helper writes the letter "W".

The target(s) (1 - 3) with achieved target times are scored. The achieved target times are added together.

This task may be included in the competition program only if the organiser provides a sufficient number of official timekeepers, so that each competitor in the round is accompanied by one official timekeeper.

Working time is 15 minutes.

Reason: This change was proposed by the f3k working group (founded in 2015 during the F3K WC in Croatia) and longer Fly-off tasks were agreed on with majority at the technical meeting in 2017 at the F3K WC in Ukraine, in the pursuit of harder tasks to give better separation especially in the Fly-off.

ab) 5.7.11.15 (new paragraph) Denmark

Add a new task (Task O) as shown below:

5.7.11.15 Fly-off Task O (All up)

All competitors of a group must launch their model gliders simultaneously, within 3 seconds of the acoustic signal. The maximum measured flight time is 300 seconds.

The official timekeeper takes the individual flight time of the competitor according to 5.7.6 and 5.7.7 from the release of the model glider and not from the start of the acoustic signal. Launching a model glider before or more than 3 seconds after the start of the acoustic signal will result in a zero score for the flight.

The number of launches are 3.

The preparation time between attempts is limited to 60 seconds after the end of the landing window. During this time the competitor may not perform test flights.

The competitor is not allowed any help during the flight testing time, working time or landing window.

The flight times of all attempts of each competitor will be added together and will be normalised to calculate the final score for this task.

No working time is necessary.

Reason: This change was proposed by the f3k working group (founded in 2015 during the F3K WC in Croatia) and longer Fly-off tasks were agreed on with majority at the technical meeting in 2017 at the F3K WC in Ukraine, in the pursuit of harder tasks to give better separation especially in the Fly-off.

Volume F4 Scale begins overleaf

15.9 Section 4C Volume F4 – Scale

Class F4C – Radio Controlled Scale Model Aeroplanes

a) 6.3.1. General Characteristics **F4 Subcommittee**

Restructure the section as follows:

~~General Characteristics~~

~~Maximum weight of the complete model aircraft without fuel in flying condition including any dummy pilot: 15 kg (≈150 Newton)~~
~~Model aircraft using electric motors as a power source shall be weighed without batteries used for those motors.~~
~~Motive Power: Rocket or pulse jet engines may not be used.~~
~~Radio Equipment:~~
~~Permitted:~~
~~The use of electronic stability augmentation devices or gyros with or without speed related automatic gain control derived from a GPS signal.~~
~~The transmission of information from the model aircraft to the pilot on the ground of Propulsion and Receiver system health monitoring. Any other data stream or telemetry is forbidden.~~
~~Not Permitted:~~
~~The use of autonomous or pre-programmed flight manoeuvres using sensors which provide altitude, heading or speed hold or any type of terrestrial reference (e.g.GPS).~~

~~Note:For all other scale model aircraft specifications see Volume General Rules, Section B, Paragraph B.1.3 General Characteristics of Model Aircraft.~~

6.3.1. General Characteristics

Maximum weight of the complete model aircraft without fuel in flying condition including any dummy pilot: 15 kg (≈150 Newton)

Model aircraft using electric motors as a power source shall be weighed without batteries used for those motors.

Motive Power: Rocket or pulse jet engines are not permitted.

Note: For all other scale model aircraft specifications see Volume; CIAM General Rules Section B, Paragraph B.1.3 General Characteristics of Model Aircraft.

6.3.1.1. Radio Control Equipment
Permitted:

a) Radio control equipment shall be of the open loop type; i.e. no electronic feedback from the model aircraft to the ground except for telemetry systems that monitor batteries, engines and fuel.
b) The use of any electronic stability device on three primary flight controls.

Not Permitted:

a) The use of GPS devices/data or any other satellite based system

b) The use of any navigational positioning sensors which provide altitude or heading hold positioning.
c) Pre-programmable devices for flight manoeuvres

IMPORTANT NOTE: Apart from the Tx, any device which can be used for programming, e.g laptop, tablet and any dedicated input device is not permitted at the flight line at any time.

Reason: Clarification to the use of gyro and other devices.

Class F4H – Radio Controlled Stand-off Scale Aeroplanes

b) 6.9.2 Eligibility **F4 Subcommittee**

Delete text as follows:

6.9.2. Eligibility

Any model which has previously been placed in the top five (5) in a Continental or World Championship F4C competition during the last 6 years, including repaints and rebuilds, will NOT be permitted in F4H. The requirement for the competitor to have constructed his own model (rule 6.1.9.4.e) is not applicable to Stand-Off Scale. ~~however the surface finish (colour and markings) on the model must have been applied by the competitor.~~

Reason: Clarify permitted models in F4H.

c) 6.9.2 Originality of Model Design & Construction **F4 Subcommittee**

Amend the paragraph and heading as follows:

6.9.4.2 Originality of Model ~~Design & Construction~~

This is an assessment of the extent to which the scale accuracy of the model is due to the effort of the competitor. Maximum marks will be awarded to a model which is ~~constructed in its entirety by the competitor~~ **built, covered and painted in its entirety by the competitor** (own design, from drawings or a traditional kit). A model which is ~~built from a modern kit might score a little less, depending upon the extent of prefabrication~~ **covered and painted might score a little less**. An ARTF model will score close to zero (unless evidence is presented of extensive modification by the competitor).

Reason: To clarify the difference between F4C and F4H.

d) 6.9.4.3 Colour and Markings Accuracy **F4 Subcommittee**

Amend the paragraph and heading as follows:

6.9.4.3 Colour ~~and Markings~~ **Accuracy and Complexity**

This is an assessment of the accuracy of the colour**s** ~~and markings~~ of **both the colour scheme and the** markings of the model ~~by~~ **in** comparison with the documentation presented.

Colour complexity relates to the number of colours, the distribution of the colours and the boundary between colours.

Reason: Consequential clarification resulting from 2016 rule change of Paragraph 6.9.5 of the same section.

e) 6.9.4.4 Colour and Markings Complexity **F4 Subcommittee**

Amend the paragraph and heading as follows:

6.9.4.4 ~~Colour and~~ **Markings** ~~complexity~~ **Accuracy and Complexity**

~~**This is**~~ **Markings accuracy** is a**n** ~~subjective~~ assessment of the ~~difficulty in reproducing and applying the finish and markings to the model~~. **position, orientation and size of the markings including the camouflage scheme in comparison with the documentation.**

Markings complexity relates to number and the extent of the markings and how they are distributed on the model.

Reason: Consequential clarification resulting from 2016 rule change of Paragraph 6.9.5 of the same section.

f) 6.9.5 Static Judging **F4 Subcommittee**

Amend the paragraph and heading as follows:

Item	**K-factor**
Scale Accuracy	
Side view	K= ~~13~~ **7**
Front view	K= ~~13~~ **7**
Top view	K= ~~13~~ **7**
Colour	
Accuracy	K= ~~7~~ **4**
Complexity	K= ~~3~~ **2**
Markings	
Accuracy	K= ~~10~~ **7**
Complexity	K= ~~5~~ **3**
Realism	K= ~~16~~ **7**
Originality of Model ~~Design & Construction~~	K= ~~20~~ **6**
Total	K= ~~100~~ **50**

Normalisation:
The total of the competitors' static scores will be normalised to 500 points as follows:

$$\text{Static Points}_x = S_x/S_w \times 500$$

Where:
Static Points_x = Normalised Static Score for competitor *x*
S_x = Static Score for competitor *x* and

S_w = Highest Static Score

Reason: To clarify that static in F4H is 50% of the flight score.

Annex 6A F4B, C and G Judges' Guide – Static Judging

g) 6A.1.9 Documentation for Proof of Scale — F4 Subcommittee

Amend the last paragraph under the heading as follows:

The static judges have a difficult task to do in a short period of time. Documentation should therefore be presented in a format that can be quickly and accurately assessed. Superfluous or contradictory evidence should be avoided. ~~The documentation must be presented as a top hinged bound volume in landscape format (calendar format) with a maximum size of A3~~. **A stiff A2 size sheet is considered to be the largest that may be comfortably handled by the judges.** ~~The sequence of pages must reflect the sequence of judging aspects eg: Side View, Front View, etc~~. **It will assist the judges if the documentation is presented in a format that reflects the sequence of the judging aspects, eg: Side view, End view, Plan view, Markings, Colour, etc.** If a specific photograph is required to document more than one of the judging aspects, it must be repeated on the relevant page to avoid that the judges have to continually turn pages back and forth to cross reference.

Reason: During the run up to the 2018 F4 Scale World Championships it was pointed out to the then F4 S-C Chairman that the paragraph regarding to what we may term "Preferred Format for Documentation" contains the verb 'MUST' which does not conform with the spirit of 'preferred' especially where no penalties for non-conformity exists. The paragraph was then changed, as a Local Rule at the 2018 event. This was met with general approval from both the contestants and judges.

The soonest approval of this urgent clarification is necessary in order to formalise the situation in good time for the preparation for contestants for the 2020 F4C/H Scale World Championships.

Annex 6C F4C Judges' Guide – Flying Schedule

h) 6C.1. General — Japan

Delete part of a sub-paragraph of 6C.1. as shown below:

The height and positioning of individual manoeuvres should be proportional to that expected in a full size display typical to each prototype. ~~Unless specified otherwise, manoeuvres that are carried out in a horizontal plane (eg Straight Flight, Figure Eight, Triangular Circuit) should commence on a flight path that is about 60°elevation to the judges. Manoeuvres such as the Descending Circle and Spin should start at a higher elevation.~~ Judges should down mark manoeuvres as too high, too low, too far away, or too close if they consider the positioning to be so.

Reason: 60°elevation to the judges is too high. Judging the model keeping same altitude or not is difficult in this angle. The judges merely looking up the bottom of the model, this makes difficult to judge whether the model going up or down.

The aim of this instruction is simply represented at first part of this instruction.

Thus, those unnecessary and well known parts should be deleted.

Annex 6F F4H Judges' Guide for Static Judging

i) 6F.3 Originality of Model Design & Construction — F4 Subcommittee

Rename the heading and rewrite this section as follows:

6F.3 ~~Originality of Model Design & Construction~~

~~a) The judge must examine the Competitors Declaration including any supporting evidence presented by the competitor and if necessary question the competitor, in order to evaluate the extent to which the competitor has contributed to the Scale Accuracy (Outline Accuracy). A maximum of 10 marks should only be awarded to a model which is entirely 'scratch built' and declared as such by the competitor. The score must be reduced if the Scale Accuracy is achieved by someone other than the competitor, or by the use of commercially available machined, moulded or pre-cut parts. However an allowance should be made if the competitor is able to provide evidence that he has modified such parts to improve Scale Accuracy. A model which has been assembled 'straight out of the box' should score a zero.~~

~~b) The following should be used as a guide:~~

~~i) Competitor designed and built 10 points~~

~~ii) Scratch Built from commercial plans 8 points~~

~~iii) Built from a traditional kit 6 points~~

~~iv) Built from substantially pre-made parts 4 points~~

~~v) Modified ARTF 2 points~~

~~vi) Unmodified ARTF 0 points~~

~~Depending on the declaration regarding self-made and modified parts, intermediate points may be awarded at the discretion of the static judges~~.

Originality of Model

a) The judge must examine the Competitors Declaration including any supporting evidence presented by the competitor and if necessary question the competitor, in order to evaluate the extent to which the competitor has contributed to the model. A maximum of 10 marks should only be awarded to a model which is entirely built by the competitor. The score must be reduced according to the effort the competitor as contributed to the model. A prebuilt model should score a zero.

b) The following should be used as a guide:

i) Competitor built (own construction, from plan or kit) covered and painted	**10 points**
ii) Covered and painted the model	**8 points**
iii) Painted the model	**6 points**
iv) Modified markings on ARF	**4 points**
v) Any unmodified ARF	**2 points**

vi) Not any achievement on the model (prebuilt & prepainted) 0 points

Depending on the declaration regarding self-made and modified parts, intermediate points may be awarded at the discretion of the static judges.

Reason: To clarify building demands in F4H showing more clearly the difference in requirement in relation to F4C requirement, present text is too close to F4C and not in line with the general class rules for F4H.

Volume F5 Electric begins overleaf

15.10 Section 4C Volume F5 – Electric

F5 – General Rules

a) Front Page of Volume **F5 Subcommittee**

Change the name of the volume and update the list of classes on the front page and consequently in all other parts of the volume:

RADIO CONTROL ELECTRIC POWERED ~~MODEL AIRCRAFT~~ MOTOR GLIDERS

~~F5B RC ELECTRIC POWERED MOTOR GLIDERS~~

F5B RC ELECTRIC POWERED **MULTI TASK GLIDERS**

F5J RC ELECTRIC POWERED THERMAL DURATION GLIDERS

~~F5D RC ELECTRIC POWERED PYLONRACING AEROPLANES~~

F5A RC ELECTRIC POWERED GPS-GLIDERS (Provisional)

F5E RC SOLAR POWERED **MOTOR GLIDERS** ~~AEROPLANES~~ (Provisional)

F5F RC 6 CELL ELECTRIC POWERED MOTOR GLIDERS (Provisional)

F5G RC ELECTRIC POWERED BIG MOTOR GLIDERS (Provisional)

~~F5K RC ELECTRIC POWERED INDOOR PYLON RACING AEROPLANES~~

Reason: With moving of F5D to F3D electric powered flight consists only of motor glider classes.

F5A – RC ELECTRIC POWERED GPS-GLIDERS (Provisional)

b) 5.5.3. Class F5A – RC Electric Powered GPS Motor Gliders **F5 Subcommittee**

*Add a new provisional class and rules. See **Annex 7h** for the new section text:*

Reason: Events with GPS Gliders are very attractive.

F5B – RC ELECTRIC POWERED MOTOR GLIDERS

c) 5.5.4.6. Duration and Landing Task **Germany**

Add text to sub-paragraph d) as shown below:

d) Duration time is cumulative and one point will be awarded for each full second the model aircraft is flying. 3 points will be deducted for each 1 second of motor running time **if the used Energy is below 1750 W/min. If the used Energy is over 1750 W/min 1 point will be deducted for each 1 second of motor running time.**

Reason: The deduction of 3 points per second motor run does not increase the value of the duration task. The penalty for using more than 1750 W/min of Energy

(5.5.4.1. b) and the 3 points deduction only cause a double penalty for bad weather conditions.

d) 5.5.4.1. Definition F5 Subcommittee

Add text to sub-paragraph b) Model Aircraft specifications as shown below, to clarify a change brought in in 2019:

b) Model Aircraft Specifications:
Type of Battery: Any type of rechargeable batteries
Minimum weight of battery pack: 400 g **including cables and connectors without any additional ballast**

Reason: To safe battery packs.

F5D – RC ELECTRIC POWERED PYLON RACING AEROPLANES

e) 5.5.6. Class F5D F5 Subcommittee

Remove the F5D Pylon Racing Class to so as to move it to F3 Pylon Racing:

Reason: It is better for the future of both classes F3D and F5D to have more competitors at FAI World Championships.

F5E – RC SOLAR POWERED AEROPLANES (Provisional)

f) 5.5.7. RC Combined Solar-Battery Distance Aeroplanes (Provisional) F5 Subcommittee

*Revise the title of the class as shown above and replace the current F5E Solar Rule. See **Annex 7i** for the new text.*

Reason: Experience showed that the current rule is too difficult.

Technical Secretary Note: The front cover of the volume states that Class F5E is RC Solar Powered Motor Gliders. It is important to have the same title of the class throughout the volume.

F5J – RC ELECTRIC POWERED THERMAL DURATION GLIDERS

g) 5.5.11.1.1. Definition of a Radio Controlled Glider with Electric Motor Germany

Add additional text at the end of the paragraph as shown below:

A model aircraft which is equipped with an electric motor to provide propulsion only for the purposes of launching, and in which lift is generated by aerodynamic forces acting on surfaces which remain fixed (except control surfaces). Model aircraft with variable geometry or area must comply with the specification when the surfaces are in maximum and minimum extended mode. The model aircraft must be controlled by the competitor on the ground, using radio control. Any variation of geometry or area must be actuated at distance by radio control. **The use of any onboard-sensed data to automatically move the control surfaces or to modify the aircraft geometry is prohibited.**

Reason: Presently there is a confusion regarding the Paragraph 5.5.11.1.1. Most of the contest organisers understand the actual text as an explicit ban of gyroscope based controls systems.
Examples:
Bulletin from the world cup Zvolen, bottom of the first page:
http://f5jfun.com/vysledky2018/zvolen/ZVOLENF5Jbulletin2018.pdf
Quote: „Because of the F5J FAI rules 5.5.11.1.1 use of Gyroscope is not allowed in the models. Please inform organizer in case of withdraw the application.“
Website of the F5J Contest in Larissa:
http://f5jgreece.com/
Quote: „ Because of the F5J FAI rules 5.5.11.1.1 use of Gyroscope is not allowed in the models.“

On the other hand, the use of gyroscope based control systems was allowed at the European Championship. This is not tolerable!
The technical rules for Open International- and World Cup Contests must be the same as for Continental- and World-Championships.
There was a big survey conducted among the pilots at the F5J contest is Szeged this year and a vast majority of pilots from different countries voted against the use of gyroscopes in F5J.

h) 5.5.11.1.1. Definition of a Radio Controlled Glider with Electric Motor USA

Add additional text at the end of the paragraph as shown below:

A model aircraft which is equipped with an electric motor to provide propulsion only for the purposes of launching, and in which lift is generated by aerodynamic forces acting on surfaces which remain fixed (except control surfaces). Model aircraft with variable geometry or area must comply with the specification when the surfaces are in maximum and minimum extended mode. The model aircraft must be controlled by the competitor on the ground, using radio control. Any variation of geometry or area must be actuated at distance by radio control. **Any airborne device that uses airborne sensors to actuate any control surface are prohibited. Stability systems as allowed in the F5 General Rules 5.5.1.3.e are prohibited.**

Reason:

5.5.11.1.1 specifically reads: *The model aircraft must be controlled by the competitor on the ground, using radio control. Any variation of geometry or area must be actuated at distance by radio control.*

F5 General Rules 5.5.1.3 reads:

d) Electronic systems allowed are:
- *Augmented stability systems.*
- *Systems that limit the energy used during climbs.*

e) Electronic systems that are prohibited are:
- *Autonomous or pre-programmed flight.*
- *GPS or similar positioning systems or waypoint navigation.*

Further exceptions are written in the specific class rules.

There is confusion as to what this means with regards to the F5 General rule stated above.

This change clarifies the intent of the specific F5J rules and is consistent with other soaring disciplines.

Technical Secretary Note: The sub-paragraph that allows the stability systems is 5.5.1.3 d) - not e).

i) 5.5.11.1.3. Characteristics of Radio Controlled Gliders with electric motor and altimeter/motor run timer (AMRT). F5 Subcommittee

Add a sentence at the end of sub-paragraph d):

d) Any device for the transmission of information from the model aircraft to the competitor is prohibited. A Spread Spectrum technology receiver that transmits information back to the competitor-operated transmitter, is not considered to be a "device for the transmission of information from the model aircraft to the competitor", provided that the only information that is transmitted, is for the safe operation of the model aircraft, ie signal strength and voltage of the receiver battery but not any positioning or height information. **Stabilizing systems and the preprograming of flights are not allowed.**

Reason: A slight contradiction in the rule would be eliminated.

j) 5.5.11.1.3. Characteristics of Radio Controlled Gliders with electric motor and altimeter/motor run timer (AMRT). Germany

Delete sub-paragraph d) (see this paragraph above) and substitute the new text as follows:

d) Any technological device used to aid in supplying data of the air's condition or direct feedback of the model's flight status is prohibited during the flight. These devices include any transmission or receiving devices not used to directly control the model aircraft (telephones, walkie-talkies, telemetry of airspeed, altitude and vertical speed etc), temperature detecting devices (thermal imaging cameras, thermometers etc), optical aids (such as binoculars, telescopes etc), and distance/altitude measuring devices (GNSS, laser range finders etc).

Telemetry of signal strength at the aircraft receiver and state of the receiver battery is permitted. Use of corrective eyeglasses, lenses and sunglasses are permitted.

Except for the approved AMRT, the installation and use of following electronic equipment is not allowed:

- **Gyroscopic Systems, including receivers with build in gyroscopic systems**
- **Devices that measure altitude, speed and vertical speed, including receivers with that function build in**
- **GNSS Equipment, including receivers with built in GNSS**

Any data, information or remark about GNSS, gyroscope and variometer in the actual transmitter model aircraft software is prohibited.
On request of the contest director the pilot has to provide a complete list of all electronic equipment (except servos, motor and motor controller) installed in his aircraft.

If an infringement of this rule occurs, the pilot will be disqualified from the contest.

Reason: Modern microcomputer based autonomous flight control systems are able to process air data, gyroscopic data and GNSS based position information and provide the pilot with a wide range of automated flight augmentation modes up to a complete autonomous flight. Since F5J is a man to man contest, the complete ban of an installation of those systems is the only way, the contest director is able to make sure they are not used by the competitor.

k) 5.5.11.1.3. Characteristics of Radio Controlled Gliders with electric motor and altimeter/motor run timer (AMRT). USA

Add a new point (iii) to sub-paragraph h) related to the essential functions of the AMRT:

h) Each model must be fitted with an approved AMRT in accordance with the Technical Specification published in F5J Altimeter/Motor Run Timer Technical Documentation.

The essential functions of the AMRT are:
i) To record and display the maximum height attained (Start Height), above a ground level reference between the instant of motor start and 10 seconds after the motor is stopped and
ii) To restrict the operation of the motor by the competitor to a single an initial continuous run not exceeding 30 seconds.
iii) To reset the start height displayed to "---" if the motor is restarted at any time during the flight.

Reason: This change is to allow for the possibility of a motor restart during a flight. This change defines the behaviour of the AMRT when a motor restart is done during a flight. 5.5.11.7.e) already describes the penalty for the condition when the AMRT does not record a start height.

Type any supporting data for the proposed technical amendments in the space below:

Allowing for a restart with a zero flight penalty during a competition flight reduces the chances of damage to an aircraft that cannot return to the field. It also reduces the chances of damaging property or injuring people in the path of an aircraft that cannot return to the field. The arguments for adopting this rule beyond the obvious above include: a) Pilots are more likely to participate in events where the likelihood of damage or loss of an expensive airplane are reduced. We want to encourage as much participation as possible. b) Flying fields are very limited and reducing the possibility of accidents is important. c) Even the most skilled pilots land out. At the F3J WC in Turkey MANY planes were lost and not recovered in the surrounding forest. At one point the organizer helicopter was dispatched to try to find some of the lost aircraft. At the US team selections in Florida a number of planes were lost in the surrounding swamp. These events have the best pilots in the world and planes are still lost. This is no longer necessary.

The arguments against allowing restarts fall into 2 main categories: a) Purist – meaning that the perspective is that allowing motor restarts is against the thought that the F5J event should emulate the other soaring disciplines that do not have

motors and therefore they should not be allowed. b) Tactical changes – meaning that the ability to restart will fundamentally change flight tactics with more risks being taken with the ability to restart.

The USA has been using the restart rule for 3 years and a poll shows that 87% of pilots that flew at least one F5J event support the restart rule. Many pilots indicated they would not fly the event without the rule as they could not afford to lose a 3K plane and felt it was not necessary. We have not observed any significant change in tactics or extra risk taking as a result of the rule. One effect of NOT implementing the rule is that only the pilots with enough money to afford losing a plane will take risks others would not. This actually gives advantages to pilots with money or sponsorships. With the restart rule – all pilots are on even standing for risk taking.

There are very few good arguments why restarts should not be allowed.

l) 5.5.11.3.1. The Flying Site & 5.5.11.10 Launching **France**

Modify both 5.5.11.3.1 sub-paragraph d); and 5.5.11.10. sub-paragraph d); to make official launch from the safety corridor:

5.5.11.10.d) Unless otherwise specified by the Contest Director, models must be launched within **the safety corridor (under the definition of 5.5.11.3.1.d)** ~~four (4)~~ **two (2)** metres of the competitor's launch~~/landing~~ spot. An attempt is annulled and recorded as zero, if the model aircraft is not launched within the above specified distance.

5.5.11.3.1.d) The flying site must also include a six (6) metre wide clearly marked ~~access~~ **safety** corridor positioned upwind of and with its nearest edge being at least fifteen (15) metres from the ~~launch/~~landing spots, **included launch marks on the at least 10 metres, one for each competitor of a group**. (Note. If light or variable wind directions are expected, the CD may choose to place additional ~~launch/~~landing spots downwind for later alternative use,) The ~~access~~ **safety** corridor must extend ten (10) metres beyond the first and last launch/landing spots.

Reason: The current rules oblige the models to overfly the access corridor during the take-off. This is dangerous. A lot of contest directors already applies this rule we are proposing here.

m) 5.5.11.5.1. Contest Flights **France**

Change sub-paragraph b) and add the following points to sub-paragraph c) as shown below:

b) The competitor will be allowed ~~only one~~ **two** attempts at each flight.

c) There is an attempt when the model aircraft is released with the motor running by the competitor or his helper.

i) The score recorded for the flight, is the score achieved on the first attempt, unless this first attempt is unsuccessful under the definition of ii)

ii) An attempt is classed as unsuccessful if the flight duration is less than 30 seconds, after the model aircraft has been released with the motor

running. If the first attempt is unsuccessful under this definition, a second attempt is allowed, with the same model, or another model.

iii) If a second attempt is made, the score recorded for the flight is the score achieved on the second attempt.

iv) If the first attempt is unsuccessful under the definition of ii) and there is not a second attempt, then the score of this first attempt is recorded as the official score.

Reason: F5J is the only radio control soaring category, not to be allowed for several attempts. The experience of the last European championships F5J showed that even the best prepared pilots were not protected from problems with the equipment. This rule distorts the results, it is not the F5J spirit.

n) 5.5.11.6. Re-flights **Hungary**

Add text to sub-paragraph a) point iii) as shown below:

a) The competitor is entitled to a re-flight if:

iii) the attempt has not been judged by the timekeeper **provided that the helper or the competitor has informed the timekeeper about the position of the model about 60 seconds before landing; if this is not done, the competitor is not entitled to a re-flight if his attempt has not been judged by the timekeeper.**

Reason: We cannot expect timekeepers to watch the models for hours and days, often in a situation where neither the pilot nor the helper can see the models.
We have to avoid situations when in case of bad result (landing earlier or far away from landing place), a pilot requests a re-flight due to timing error.
This is generally a local rule in F5J FAI World Cup competition agreed by the organizers and competitors.
Examples:
F5J Tisza Cup (HUN),
http://www.5mp.eu/fajlok2/f5j-hu/2018_invitation_f5j_tisza_cup_www.5mp.eu_.pdf
F5J Zvolen (SVK)
http://f5jfun.com/vysledky2018/zvolen/ZVOLENF5Jbulletin2018.pdf.

o) 5.5.11.8.1. Rounds and Groups **Germany**

Add text at the end of sub-paragraph c) as shown below:

c) Other than in the Fly-off, the composition of Groups should minimise the situation where any competitor flies against another many times.

At a World and Continental Championship team protection is mandatory except in Fly-offs. At Open International and World Cup events team protection is not permitted.

For the benefit of junior pilots, the Contest Director shall grant team protection to the junior pilot and the helper he specified at the contest registration if the helper is also taking part in the contest as a pilot.

Reason: A lot of junior pilots may take part in a contest together with an experienced senior pilot as their familiar helper. Since we are all trying to inspire juniors to take part in contest flying, granting “team-protection” to the junior pilot and his helper would make it possible for both of them to take part in a contest together.

p) 5.5.11.10. Launching **France**

Add text to sub-paragraph b) as shown below:

b) The general direction of the launch must be set by the Contest Director. All launches must be made in this general direction even in zero or variable light wind conditions. **The model must keep this general direction for 3 seconds after the launch. No turn back or loop is allowed during this 3 seconds period.** A penalty of 100 points will be applied for any breach of this rule.

Reason: At present, some pilots make a violent turn back or loops above the starting line, immediately after the launch of the model, for going toward to keep the thermic behind the starting line. It leads to dangerous action, for the other models, but most of all for the other pilots and timekeepers near the model. To forbid trajectory modification during this 3 seconds following the launch, will prevent risks produced by an operation over the starting line.

q) 5.5.11.10. Launching **France**

Modify sub-paragraph c) as shown below:

c) ~~The motor must not be run before the start signal is given~~. **The motor must not be run during the last minute of the preparation time, up to when the start signal is given**. A penalty of 100 points will be applied for any breach of this rule.

Reason: At present, the rules do not specify clearly that starting the motor during the preparation time is allowed, but only that the motor must not be run before the start signal is given, that leads to misunderstanding. Specifying clearly the moment from which the engine cannot turn, eliminates any misinterpretation.

r) 5.5.11.10. Launching **Bulgaria**

Modify sub-paragraph d) as shown below:

d) ~~Unless otherwise specified by the Contest Director, models must be launched within four (4) metres of the competitor’s launch/landing spot. An attempt is annulled and recorded as zero, if the model aircraft is not launched within the above specified distance.~~ **Model must be launched inside the access corridor not more than two (2) meters from starting position mark (number) at general direction of the launch line of the access corridor.** An attempt is annulled and recorded as zero, if the model aircraft is not launched within the above specified distance.

Reason: This launching is already used as local rule at many contests for more safety.

s) 5.5.11.11. Landing **Bulgaria**

Remove sub-paragraph b) from this section:

~~b) The direction of the final approach to landing must be set by the Contest Director. All final approaches must be made in this direction even in zero or variable light wind conditions. A penalty of 100 points will be applied for any breach of this rule.~~

Reason: Many competitions with calm weather and thermal shift of the wind show that this rule is not good enough and mostly dangerous.

t) 5.5.11.11. Landing **Germany**

Modify sub-paragraph b) with one change and the addition of a sentence at the end:

b) The direction of the final approach to landing ~~must~~ **can** be set by the Contest Director. All final approaches must be made in this direction even in zero or variable light wind conditions. A penalty of 100 points will be applied for any breach of this rule.
Taking into account the actual distance between the landing points, the distance to the safety corridor and the prevailing wind conditions, the contest director may leave the choice of the landing direction to the Pilots.

Reason: Nowadays, more and more unstable and fast changing weather conditions giving the pilots the choice of the landing direction will reduce the number of late und low turns on the final approach and lowers the risk of hazardous tailwind landings we have seen in the past.

The Pilot reacts on the surrounding conditions, to land his Plane safely (as usual). This procedure is working at F3J for years without any unfavourable effects.

u) 5.5.11.12. Scoring **Bulgaria**

Modify sub-paragraph a) as follows:

a) The attempt must be timed from moment of ~~release from the hand of the competitor or his helper to either :~~ start of **motor run (signal for motor ON from receiver to ESC in case of electronic timing). Scoring ends when**

i) ~~The model aircraft first touches the ground; or~~ **the model aircraft comes to rest after landing**.

ii) ~~The model aircraft first touches any object in contact with the ground; or~~

ii) Completion of the Group's Working Time.

Reason: This rule change will give good chance to implement new electronic timing devices in to F5J gliders.

v) 5.5.11.12. Scoring **F5 Subcommittee**

Modify sub-paragraph a), point i) as follows:

a) The attempt must be timed from moment of release from the hand of the competitor or his helper to either:

i) ~~The model aircraft first touches the ground~~ **The model aircraft comes to rest after landing**; or

ii) The model aircraft first touches any object in contact with the ground; or

iii) Completion of the Group's Working Time.

Reason: Easier for time keepers.

w) 5.5.11.12. Scoring **USA**

Change one word in sub-paragraphs b) and d):

b) The flight time in seconds, must be ~~rounded down~~ **truncated** to the nearest second ignoring any fractions on the watch.

d) The recorded Start Height in metres shall be ~~rounded down~~ **truncated** to the nearest metre ignoring fractions on the AMRT.

Reason: Truncation is the more common terminology for the operation described and this clarifies the operation.

x) 5.5.11.15. Weather conditions / Interruptions **Netherlands**

Add a new paragraph:

5.5.11.15 Weather conditions / Interruptions

The maximum wind speed for F5J contests is nine (9) m/sec two (2) m above the ground at the centre of the landing spots. The start of the contest must be delayed or the contest has to be interrupted by the contest director if the wind speed exceeds twelve (12) m/sec measured three (3) times for at least twenty (20) sec in a time interval of five (5) minutes at the start and landing area.

Reason: The aim of F5J is to offer an exciting thermal duration competition. High wind speeds over 9m/s reduce the amount of thermals and result in pilots taking substantial risks, often flying very far down wind.

Similar to F3K (flying with similar wing-loadings), maximum wind speed should be introduced to offer fairer competitions.

5.5.12 F5K – RC ELECTRIC POWERED INDOOR PYLON RACING AEROPLANES (PROVISIONAL)

y) 5.5.12. Class F5K – Indoor Pylon Racing Models **F5 Subcommittee**

Cancel this class and delete this section from the F5 Volume of the Sporting Code:

Reason: No interests - only one open international in the FAI 2017 calendar.

Volume 9 – Drone Sport begins overleaf

15.11 Section 4C Volume F9 – Drone Sport

a) Section B – General (before B.1.) **The Netherlands**

Add the following text to the paragraphs regarding the 'helper':

The FPV pilot is assisted during the race by one and only one helper who stays next to him during the whole flight. The helper is mandatory. He may be another competitor.
The main task of the helper is to keep the model in visual line of sight. He must inform the FPV pilot of anything occurring that can affect his(her) piloting, especially about safety. If the helper requests the FPV pilot to land or to cut off the motors, he must do it immediately. In case of emergency, the helper is authorized to shut off the transmitter in order to trigger the fail-safe device.
A coach is allowed to inform the pilot on a designated place via earphone with about the same sight of the pilot and on the same height. The coach is not the same person as the helper.

Reason: To improve the information for the pilot.

b) New contests **Germany**

*Refer to **Annex 7j** for the text of two new contests:*

End of Agenda Item 14

16. ELECTION OF SUBCOMMITTEE CHAIRMEN

16.1. Subcommittee Chairmen

F1 Free Flight
F3 RC Aerobatics
F3 RC Soaring
F3 RC Helicopter
F3 RC Pylon Racing

17. FAI WORLD AND CONTINENTAL CHAMPIONSHIPS 2019 – 2022

VERY IMPORTANT: Each NAC/country/Delegate presenting a bid prior to voting for the award of the Championships may make a presentation of the championship organisation, lasting a MAXIMUM of 2 minutes only. Presentations for bids with only one candidate will be performed only if any of the Delegates requests so. Bidders are requested to distribute important information prior to the meeting, to each of the NACs/delegates by electronic means. This is to enable Delegates to study the contents of the bid, so that they may make informed decisions at the meeting.

FAI WORLD CHAMPIONSHIPS

2019 FAI World Championships for…	Awarded to	Location and Actual Dates
F1A, F1B, F1C Seniors	**USA**	Lost Hills, CA 17- 22 October
F1E (Seniors and/or Juniors)	**SLOVAKIA**	Martin, 25 – 30 August
F3A (Seniors and Juniors)	**ITALY**	Calcinatello, 1 -11 August
F3B (Seniors and Juniors)	**CZECH REPUBLIC**	Jesenik, 5 – 10 August
F3CN (Seniors and Juniors)	**GERMANY**	Ballenstedt, 3 – 10 August
F3D (Seniors and Juniors)	**AUSTRALIA**	Maryborough, 7 - 11 August
F3K (Seniors and/or Juniors)	**HUNGARY**	Jakabszallas, 14 – 20 August
F3P (Seniors and Juniors)	**GREECE**	Heraklion (Crete), 17 -23 March
F5J (Seniors and Juniors)	**SLOVAKIA**	Trnava, 11 – 18 August

2020 FAI World Championships for…	Awarded to	Location and Actual Dates
F1A, F1B, F1P Juniors	**ROMANIA**	Deva, 3 – 9 August
F1D (Seniors and/or Juniors)	**ROMANIA**	Slanic-Prahova, 17-20 March
F2A, F2B, F2C, F2D (Seniors and Juniors)	**POLAND**	Wloclawek, 20-31 July
F3F (Seniors and Juniors)	**FRANCE**	Toulouse, 5-10 October
F3J (Seniors and/or Juniors)	**SLOVAKIA**	Tekovsky Hradok, 20-26 July
F4CH (Seniors and Juniors)	**NORWAY**	Tonsberg, 27 July -1 August
F5B (Seniors and Juniors)	Offers invited	To be awarded in 2019
SPACE MODELS (Seniors and Juniors)	**ROMANIA**	Costesti Buzau, 21-29 August

2021 FAI World Championships for…	Bids From	To be Awarded in 2019
F1A, F1B, F1C Seniors	France (firm) Romania (withdraw or firm) Mongolia (firm)	
F1E (Seniors and/or Juniors)	Romania (firm)	
F3A (Seniors and Juniors)	awarded in 2018 **USA**	Muncie, 24 July – 2 August
F3B (Seniors and Juniors)	Offers invited	
F3CN (Seniors and Juniors)	Romania (firm)	
F3M (Seniors and Juniors)	Romania (withdrawn)	
F3D, F5D (Seniors and Juniors)	Offers invited	
F3K (Seniors and/or Juniors)	Romania (withdrawn)	
F3P (Seniors and Juniors)	Romania (firm)	
F5J (Seniors and Juniors)	Ukraine (firm)	

2022 FAI World Championships for…	Bids From	To be Awarded in 2020
F1A, F1B, F1P Juniors	Russia (firm) Romania (firm)	
F1D (Seniors and/or Juniors)	Romania (firm)	
F2A, F2B, F2C, F2D (Seniors and Juniors)	Ukraine (firm)	
F3F (Seniors and Juniors)	Offers invited	
F3J (Seniors and/or Juniors)	Offers invited	
F4CH (Seniors and Juniors)	Offers invited	
F5B (Seniors and Juniors)	Offers invited	
SPACE MODELS (Seniors and Juniors)	Offers invited	

FAI CONTINENTAL CHAMPIONSHIPS

2019 FAI Continental Championships for…	Awarded to	Awarded to Location and Actual Dates
F1A, F1B, F1P Juniors	**FYR MACEDONIA**	Prilep, 30 July – 3 August
F1D (Seniors and/or Juniors)	**CZECH REPUBLIC**	Svetce, 2-9 June
F2A, F2B, F2C, F2D (Seniors and Juniors)	**BULGARIA**	Pazardzhik, 14- 20 July
F3J (Seniors and/or Juniors)	**POLAND**	Wloclawek, 28 July - 3 August
SPACE MODELS (Seniors and Juniors)	**ROMANIA**	Buzau Costesti, 11 – 18 August

2020 FAI Continental Championships for…	Bid	Location and Actual Dates
F1A, F1B, F1C Seniors	Awarded in 2018 **FYR MACEDONIA**	Prilep
F1A, F1B, F1C Asian-Oceanic Seniors	Mongolia (firm)	
F1E (Seniors and/or Juniors)	Awarded in 2018 **ROMANIA**	Turda, 20-24 July
F3A (Seniors and Juniors)	Awarded in 2018 by Bureau **SPAIN**	
F3A Asian-Oceanic (Seniors and Juniors)	Offers invited	To be awarded in 2019
F3B (Seniors and Juniors)	Offers invited	To be awarded in 2019
F3CN (Seniors and Juniors)	Offers invited	To be awarded in 2019
F3CN Asian-Oceanic (Seniors and Juniors)	Offers invited	To be awarded in 2019
F3K (Seniors and/or Juniors)	Offers invited	To be awarded in 2019
F3P (Seniors and Juniors)	Offers invited	To be awarded in 2019
F5J (Seniors and Juniors)	Offers invited	To be awarded in 2019
F3P (Seniors and Juniors)	Offers invited	To be awarded in 2019

2021 FAI Continental Championships for…	Bids from	To be Awarded in 2019
F1A, F1B, F1P Juniors	France (firm) Romania (firm) Russia (firm)	
F1D (Seniors and/or Juniors)	Romania (firm)	
F2A, F2B, F2C, F2D (Seniors and Juniors)	Offers invited	
F3F (Seniors and/or Juniors)	Offers invited	
F3J (Seniors and/or Juniors)	Offers invited	
SPACE MODELS (Seniors and Juniors)	Offers invited	

2022 FAI Continental Championships for…	Bids from	To be Awarded in 2020
F1A, F1B, F1C Seniors	Offers invited	
F1E (Seniors and/or Juniors)	Offers invited	
F3A (Seniors and Juniors)	Offers invited	
F3A Asian-Oceanic (Seniors and Juniors)	Offers invited	
F3B (Seniors and Juniors)	Offers invited	
F3CN (Seniors and Juniors)	Offers invited	
F3CN Asian-Oceanic (Seniors and Juniors)	Offers invited	
F3K (Seniors and/or Juniors)	Romania (firm)	
F3P (Seniors and Juniors)	Offers invited	
F5J (Seniors and Juniors)	Offers invited	

18. ANY OTHER BUSINESS

19. NEXT CIAM MEETINGS

Bureau meeting on December 6th and 7th 2019

The table of Agenda Annexes appears overleaf.

ANNEXES TO THE AGENDA OF THE 2019 CIAM PLENARY MEETING

ANNEX FILE NAME	ANNEX CONTENT
ANNEX 1 (a-b)	FAI Code of Ethics, Nomination Form for Office Holders
ANNEX 2 (a-n)	2018 FAI Championship Reports
ANNEX 3 (a-p)	2018 Subcommittee Chairmen Reports, Technical Secretary, Treasurer Reports, EDIC WG, Scholarship
ANNEX 4 (a-m)	2018 World Cup Reports
ANNEX 5 (a-d)	2018 Trophy Reports
ANNEX 6 (a-k)	FAI-CIAM Awards: Nominee Forms
ANNEX 7a	Annex 5A F3A – Description of Manoeuvres
ANNEX 7b	Annex 5M F3P – Description of Manoeuvres
ANNEX 7c	F3S Rules 5.12.1-5.12.12
ANNEX 7d	F3S Description of Manoeuvres
ANNEX 7e	F3N – Set Manoeuvre Drawings
ANNEX 7f	Annex 5D F3D Pylon Noise Rules
ANNEX 7g	Class E F3B Proposal
ANNEX 7h	F5A Rules 5.5.3.
ANNEX 7i	F5E Rules 5.5.7.
ANNEX 7j	F9U Droneball Rules
ANNEX 7k	F9U Team Race Rules
ANNEX 8 (a-e)	Scholarship Candidates

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