

**2004 FAI WORLD GRAND PRIX®SPORTING CODE
CIVA COMPETITION REGULATIONS - POWERED AEROBATIC AIRCRAFT / PROPELLERS**

DOCUMENT UPDATED 02 DEC 2003

The document can be modified and cannot be considered as a contract or part of a contract.

TABLE OF CONTENTS

1. INTRODUCTION
 - 1.1. THE FAI WORLD GRAND PRIX CHAMPIONSHIP
 - 1.2. COMPETITORS
 - 1.3. EVENTS
2. FORMAT
3. FLIGHT PROGRAMMES
4. NOMINATION & ROLE OF THE JUDGES
5. COMPETITION REGULATIONS
 - 5.1. BRIEFINGS
 - 5.2. CANCELLATION
 - 5.3. EVALUATION OF THE COMPETITION FLIGHTS
 - 5.3.1. MARKS
 - 5.3.2. SELECTION OF FIGURES
 - 5.3.3. TIME LIMITS
 - 5.3.4. HEIGHT LIMITATIONS
 - 5.3.5. SIGNALLING START & FINISH
 - 5.3.6. SEQUENCE
 - 5.3.7. SMOKE SYSTEMS
 - 5.3.8. MUSIC
 - 5.3.8.1. MUSIC-PERFORMING RIGHTS
 - 5.3.8.2. MUSIC-OPERATION
 - 5.3.9. PUBLIC VOTE
 - 5.4. SCORES BY EXPERT JUDGES
 - 5.4.1. TECHNIQUE and PRECISION
 - 5.4.2. ARTISTIC CREATIVITY
 - 5.4.2.1. CRITERIA FOR SOLO PILOTS
 - 5.4.2.2. CRITERIA FOR FORMATION TEAMS
 - 5.4.3. RESULTS
 - 5.4.4. COLLECTION OF SCORING SHEETS
 - 5.4.5. PUBLIC ANNOUNCEMENTS
 - 5.4.6. FINAL RESULTS - POINTS
 - 5.4.7. DEAD HEAT

1. INTRODUCTION

1.1. The FAI World Grand Prix Championship for Powered Aerobatic Aircraft

An FAI World Grand Prix Championship (or Series) for Powered Aerobatic Aircraft will last for two calendar years, starting on 01 January of an even year, ending on 31 December of the following odd year (links to biennial World Aerobatic Championships).

It will provide titles of World Grand Prix Champions for different categories:

(i) Two titles for solo pilots:

- C1-Unlimited for piston engined propeller aircraft;
- T-Class for turboprop Trainers less than 5,700kg;

(ii) One title for formation teams:

- C-Class for propeller aircraft;

(iii) Two titles for constructors:

- C1-Unlimited;
- T-Class;

It consists of the FAI World Grand Prix competitions (Series of Events) which are included in the FAI calendar and in respect of which Promoters have signed the organisation agreement.

1.2. Competitors

Competitors can be solo pilots (maximum 9) or formation teams (maximum 6) holding a FAI World Grand Prix Licence.

1.3. Events

1.3.1. The FAI World Grand Prix Championship will consist of a series of Events to be held as announced every year in the FAI Calendar of Events.

Each Event will have the status of a World Championship competition.

The minimum number of Events is one, no maximum number has been defined yet.

1.3.2. Events are opened to solo and formation team aerobatic flights in the following Categories:

- Propeller aircraft without any limitation (Piston Engine and Turboprops) = Cat. C1-Unlimited for solo pilots and C-Class for formation teams.
- Turboprop 2-seat trainers less than 5'700 kg. = T-Class.

1.3.3. For formation teams, the only distinction is made between piston engined & turboprop aircraft

1.3.4. There is no distinction between male and female classes.

1.3.5. All categories may not be displayed at each Event.

2. FORMAT

2.1. Depending on the number of competitors and programmes to be flown, each competition will last between:

- a minimum of two (2) hours
- and a maximum of 3 days (one practice day and two public days).

**2004 FAI WORLD GRAND PRIX®SPORTING CODE
CIVA COMPETITION REGULATIONS - POWERED AEROBATIC AIRCRAFT / PROPELLERS**

DOCUMENT UPDATED 02 DEC 2003

The final result of each contest will be obtained by adding up the points scored by each competitor in all their competition flights.

2.2. Each competitor may officially fly up to five (5) times on site:

- (i) one check flight after aircraft reassembly;
- (ii) two practice flights (10 minutes per solo, 20 minutes per team);
- (iii) one competition flight (Technique and Precision, 4 minutes per solo, 8 minutes per team);
- (iv) one competition flight (Artistic Creativity - Freestyle to music, 4 minutes per solo, 12 minutes per team);

All times mentioned are "display times", from the opening figure of the performance to the closing figure.

2.3. Although the judging criteria could be similar, categories will not compete between each other.

2.4. A minimum of 2 competitors is required for having a competition in a category.

3. FLIGHT PROGRAMMES

Pilots will fly up to two competition programmes displaying their technical and artistic abilities:

- (i) Technique and Precision with one (1) freestyle figure, four (4) compulsory figures and one (1) freestyle figure in a maximum time limit of 4 minutes;
- (ii) Artistic Creativity, a "freestyle to music, duration between 3min30 and 4 minutes for solo pilots, between 11 and 13 minutes for formation teams).

4. NOMINATION & ROLES OF JUDGES

4.1. FWGP JUDGES

Nominated by FAI-CIVA, the International Board of Judges of six (6) will be composed of one International Jury, one Chief Judge and four International Judges.

4.1.1. One (1) Chief Judge

Safety will at all times be the primary consideration of the Chief Judge. The Chief Judge shall be selected and appointed by the FAI for all categories.

- A specialist in each category may assist the Chief Judge.
- The person must have previous experience of serving as a Chief Judge at a major International competition run under FAI rules.
- The main concern of the Chief Judge should be the accurate and fair judging of the competition flights, including the monitoring of flights for penalties. He should place his expertise at the disposal of the Board of Judges, and co-ordinate and guide their work.
- The Chief Judge should hand raw results right after each flight, so the public can be informed as soon as possible.
- The Chief Judge shall give marks like any of the other Judges. The official recording of penalties will be on a separate sheet, which is later available for the contestant to check.
- The awarding of penalties, or disqualification for infringement of the Display Line, is decided by unanimity of 4 votes (including the Chief Judge) in the absence of special measuring devices.
- He certifies the scores.

**2004 FAI WORLD GRAND PRIX®SPORTING CODE
CIVA COMPETITION REGULATIONS - POWERED AEROBATIC AIRCRAFT / PROPELLERS**

DOCUMENT UPDATED 02 DEC 2003

- He advises the Technical Commission, Medical and Safety Committee when required.
- He deals with protests from competitors.
- He oversees the administration of the contest.
- He reports the Judges decision concerning penalties immediately after landing.

4.1.2. Four (4) International Judges

For marking the quality of aerobatic manoeuvres.

- They will mark the programmes and infringements of the Display line in compliance with the rules.
- They will also check the duration of flight and give penalty points when applicable.
- They will record low infringements

4.1.3. Jury (1).

4.1.3.1. The Jury at a Grand Prix Event will be nominated by FAI.

- The Jury will be nominated for all categories.
- Any decision taken by the Jury is final.
- The Jury is not authorised to change any rule that has been approved.

4.1.3.2. The Jury is the supreme arbitration body and shall be responsible for:

- Interpreting the Judging Rules and the General Regulations of the contest.
- Supervising the activities of the Board of Judges.
- Supervising the Technical Commission, Medical and Safety Committee when required.
- Dealing with protests from competitors. The Jury must be available to hear appeals or protests submitted by competitors.
- Overseeing the administration of the contest.
- Reporting the Judges decision concerning penalties immediately after landing.

4.1.4. Representation on the Board of FWGP Judges

All International Judges must have been approved by the FAI and listed in the FAI official document to that effect. The final selection of FAI Judges for the Grand Prix will be made by the CIVA Bureau after the nominations are closed.

4.1.5. Deadline (Display Line) Judges

The infringement of the Display Line will cause disqualification of the competitor.

When required, the Chief Judge may select deadline judges on site should no electronic devices be available to confirm any infringement.

Should no electronic devices be available, disqualification will be confirmed when four (4) Judges of the Board (including the Chief Judge) report the infringement, in addition to the deadline Judges (if any).

4.1.6. Position of the Judges

The Judges will be posted by the Chief Judge at positions decided during the briefing before training flight with Pilots and Judges.

4.2. Vote by the public audience

The public audience may be invited to vote by any means agreed by the FWGP-CC. The ranking made by the public audience will be separated from the ranking made by the official judges.

5. COMPETITION FLIGHTS REGULATIONS

5.1. BRIEFINGS

Prior to the start of a contest a briefing will be made by the Flight Director, Contest Director and Chief Judge to all competitors and officials on flight conditions, contest programmes, and any other problems which might arise over the interpretation of the rules.

5.1.1. Pilots Briefing

- Prior to the start of the first Practice flight a briefing will be made to Competitors on local procedures.
- Before the beginning of each flying day, a briefing will be held for Competitors, Officials, Judges, and the International Jury on organisational matters concerning this day.

The briefings shall include, as a minimum:

- Weather forecast and winds aloft.
- Description of the performance Zone and the Judges position.
- Safety and Security rules, deadline and minimum altitude if any.
- Starting procedure.
- Music procedure.
- Determining the flight order (with necessary adjustments to accommodate Pilots sharing the same aircraft).
- Emergency procedures.

The Pilots briefing is compulsory. No Briefing = NO FLIGHT.

5.1.2. Judges Briefing

This briefing is compulsory for all International Judges. It will be conducted by the Chief Judge and shall include:

- Deadline Judges duties (if any).
- Judges review of the following items:
 - Range of scores
 - Criteria for scoring.
 - Other items deemed necessary.
- Emergency procedures.

5.2. CANCELLATION

- If one Competitor cannot fly because of technical trouble with his/her aircraft, the Competitor will be withdrawn and the competition will be validated.
- The Contest Director can stop the competition at any time when required.

5.3. EVALUATION OF THE FLIGHTS

5.3.1. Marks

Marks are assigned by judges with numbers from 0 to 10 accurate to 0.5

- The score is calculated by multiplying the judges' marks by the coefficients (K factors) of the different criteria and adding the products.

- The highest and the lowest scores of each pilot will be deleted unless a suitable statistical method becomes available.
- The marks of a Judge for a Competitor of his or her own country will be included in the calculation of results.

5.3.2. Selection of Figures

Selection of figures or figure combinations in the freestyle programmes will be made by each Competitor.

Other programmes will be selected by the FWGP-CC.

5.3.3. Time Limits

- The "Technique and Precision" programme (1 freestyle figure, 4 unknown figures, 1 freestyle figure) has to be performed in less than four minutes.
- The "Artistic Creativity" programme (Freestyle to Music) has to be performed between time limits (3'30-4'00 for solo pilots and 11'00-13'00 for formation teams).
- Any deviation of time under the minimum or over the maximum will incur 10 (ten) penalty points for each further second or each further fractional part of a second, with a maximum of 150 penalty points (reduced from the total score given by the 3 validated judges).

5.3.4. Height Limitations

The lower limit shall be 30 meters above any obstacles in the performance zone, 250 penalty points applicable from averaged score for each infringement by a majority of the judges scoring.

The disqualification height shall be 20 meters above any obstacles in the performance zone, disqualification must be applied by 80% of the Judges.

Height limitations not applicable after end of sequence (noted by wing dipping). Low passes as briefed are permitted.

5.3.5. Signalling Start and Finish

- A Solo Competitor must signal the start and finish of the program by distinctly dipping the wings 3 times immediately one after the other by more than 45°.
For timing purposes the program is deemed to start on the return of the wings to level after the 3rd wing dip, and is deemed to finish on their return to level after the first of the final wing dips.
- Formation teams will signal their start and finish by radio.
- If start / finish is not signalled, a penalty of 150 points will be applied.

5.3.5.1. Start and Finish - angle.

- For solo Competitors, the start and finish of the program may be in normal or inverted flight on a horizontal, ascending or descending path, which must not deviate from the horizontal by more than 45°.
- No constraint for formation teams.

5.3.5.2. Start and Finish - altitude.

Competitors may start or finish their program at any height between the minimum altitude above airfield level and the maximum height allowed by the Airspace waiver, within the limits of the Performance Zone.

5.3.6. SEQUENCE

Forms containing the sequence of figures will have to be submitted to the Contest Director when requested, to be provided to the National Aviation Authorities. They will be kept secret from the other Competitors and from the Judges.

5.3.7. SMOKE SYSTEM

All aircraft have to be equipped with a smoke system. Smoke will be used at the option and under the responsibility of each Competitor

5.3.8. MUSIC

5.3.8.1. MUSIC - RIGHTS

Each competitor will select the music for its own flights and will undertake all responsibility with regards to obtaining the permission from composers to use their music for public displays.

Each Promoter will undertake all responsibility in regards to the performing rights (broadcast) for recorded music, including declaration to an appropriate Company in charge of collecting authors rights in the Event country.

5.3.8.2. MUSIC - OPERATION

CD/MD

Competitors are required to supply their musical accompaniment on one MD track (preferably) or a CD for the "Freestyle to Music" programme. The music will be played exactly as per the recording, no action will be made by the local operator (fade out, change tracks, etc...)

Music in the Cockpit

- The Pilots will be provided with the capability of hearing the music whilst flying. To ensure this possibility, it is highly recommended that the aircraft be equipped with the appropriate receiver provided by HAUTE VOLTIGE®.
- Combination with an announcer is possible but comments should not be heard by the pilots.
- Until direct command of the music from the pilot's cockpit becomes possible, the following procedure should be applied.

Music - Radio Procedure

After a radio check (procedure = "Radio check" on the music frequency), music will begin on the word "GO" upon the instructions of the Pilot by radio (procedure = "Music READY ... Music GO!" on the music frequency) to the operator of the music system.

Music - Failure

- If the music does not start because of a technical problem linked to the sound system itself, the sequence may be aborted by the Pilot after he has made the announcement by radio to the Contest Director.
- The Competitor will be entitled by the Chief Judge to fly again.

5.3.9. PUBLIC VOTE

Anyone in the public audience may be invited to vote for his/her preferred competitor. The competitor receiving the highest number of ballots in his favour will be the winner of the public vote. It will not interfere with the scoring by expert judges.

5.4. SCORES BY EXPERT JUDGES

- Total K = 400 per programme flown. It means that the maximum score possible is 4000 points per Judge/per programme.
- The maximum total score will be 12000 points per pilot per programme (highest and lowest scores are deleted).
- The total number of points will be brought back to 100, which will give the percentage of perfection reached by the Competitor.

5.4.1. TECHNIQUE and PRECISION

- This programme is not yet applicable to formation teams.
- It is an "unknown" programme, to be flown by all solo pilots without practice, composed of one freestyle figure, 4 unknown figures from the FAI Catalogue, ending with one freestyle figure. Pilots will draw lots to determine figure selection for the 4 unknown figures, normal CIVA regulations to apply concerning content.
- Each pilot will fly the figures in the order defined by the Chief Judge, one after another, without any linking figures.
- Should the competitor make a mistake in the order of the figures, the figures concerned will incur a zero (0).
- Each figure will be allocated a K factor as per the FAI Catalogue.
- For each competitor, highest and lowest marks for each figure will be deleted if no statistical method available.
- Time limit = 4 minutes, with a maximum penalty of 150 points (10 points per additional second). Figures flown after 4min15, will be scored zero (0).

5.4.2. ARTISTIC CREATIVITY

All Freestyle Programmes will be marked under 3 different headings:

- (1) Technical Merit
- (2) Artistic Impression
- (3) Positioning

5.4.2.1. CRITERIA FOR SOLO PILOTS

(1) TECHNICAL MERIT = 120K

- Use of the full range of the flight envelope = 40K

The pilot is expected to make full use of many different areas of the flight envelope of the aircraft. This means flying at the full range of air speeds and accelerations permitted. The time available should be divided between high speed, high G manoeuvres and slower flight periods. Both positive and negative parts of the envelope should be used, in reference to both speed and G. The flight should include the demonstration of controlled flight beyond the stall boundary by use of auto-rotation or other high-alpha manoeuvres. The judge will deduct points if any of these areas are noticeably under-utilised.

2004 FAI WORLD GRAND PRIX®SPORTING CODE
CIVA COMPETITION REGULATIONS - POWERED AEROBATIC AIRCRAFT / PROPELLERS

DOCUMENT UPDATED 02 DEC 2003

Exploitation of aerodynamic controls & gyroscopic forces:

The pilot is expected to show movement of the aircraft about all axes using both conventional aerodynamic controls and also using propeller-generated gyroscopic forces. Higher marks will be given to pilots able to make use of all these effects through a wide range of aircraft attitudes and flight paths. Repeated use of any such forces in the same or similar attitudes should attract lower scores.

- Precision of the execution = 40K

It should be clear to the judges that the manoeuvres flown were, in fact, intended and fully under the pilot's control. Higher marks will be given under this heading when individual manoeuvre elements are started and finished on obviously precise headings and well-defined attitudes. When, for example, gyroscopic manoeuvres are allowed to decay into imprecise, poorly defined auto-rotation, judges should consider deducting marks for poor execution. Marks should also be deducted if it appears that the pilot has relinquished control of the aircraft for short periods.

- Versatility: combination of a wide variety of figures flown on different axes & flight paths = 40K

Many different figures should be completed in the time available. These should include manoeuvre elements of many different kinds and should use many different flight paths and axes. Lower marks should be given to a pilot who used only one or two principal axes of flight. However, the use of additional axes must be clear and precise, not giving the appearance of being used by chance. Marks should also be deducted if any particular manoeuvre element is over-used or continues for an excessive period of time.

(2) ARTISTIC IMPRESSION = 200K

- Synchronisation with musical accompaniment = 180K

The difficulty of the Grand Prix is for pilots to fly perfectly in harmony and rhythm with a musical arrangement they have selected themselves. Marks should be deducted in this category for a flight that shows no relation between the rhythm of the evolutions and the music, therefore transforming the musical accompaniment to simple background music.

- Appropriate use of smoke systems = 20K

Smoke systems are used at pilot's discretion to underline figures and offer them additional value, not to create a permanent fog around the aircraft. It is an art to define when to use smoke and when it is not appropriate.

(3) POSITIONING = 80K

- Symmetry - The sequence should be centered on the judges position and flown within the performance zone = 40K

Highest marks will be given when the sequence as a whole is balanced evenly to the left and right of the judges' direct line of vision towards the centre of the performance zone. Marks should be deducted if, by design or by influence of the wind, a pilot's programme is noticeably biased to left or right. The greater the degree of asymmetry, the greater should be the deduction.

Even though a flight might be symmetrical, it may also spread too far to either side, so that some manoeuvre elements are flown outside the performance zone. Figures may also be flown on the direct line of vision but very distant. Any part of the flight that is flown so far away that it appears to be outside the zone should be penalized at a rate of 0.5 of a mark for each apparent excursion.

- Presenting individual figures in their best orientation and their optimum position = 40K

Figures can give different impressions when seen from different viewpoints. For example, a climbing inverted flat spin (eventail) looks most impressive when the top of the aircraft can be seen. A loop flown in a plane inclined at 45 degrees to the vertical is best appreciated when it is flown on the Y-axis.

Each figure has an optimum position from which it should be viewed. For example, a figure flown near the upper height limit will cause discomfort when flown at the near edge of the performance zone; a low level horizontal figure is better seen from close than far away.

Marks should therefore be deducted if the judge is not shown a figure in its best orientation and optimum position.

5.4.2.2. CRITERIA FOR FORMATION TEAMS

Some of the criteria have the same definition for solo pilots and formation teams.

(1) TECHNICAL MERIT = 160K

A higher number of aircraft in the formation has to be considered by the Judges as an additional coefficient of difficulty for many criteria.

- Close formation (positive and inverted), symmetry, constant distance between aircraft, parallax correction = 40K
- Formation changes during vertical and turning figures = 30K
- Precision of the execution = 30K
- Versatility: combination of a wide variety of figures flown on different axes & flight paths = 30K
- Synchronisation between different elements of the formation team (timing between synchro-pair and main formation, crossings of the synchro pair, splits and join-ups) = 30K

(2) ARTISTIC IMPRESSION = 160K

- Synchronisation with musical accompaniment = 120K
- Appropriate use of smoke systems = 40K

(3) POSITIONING = 80K

- The sequence should be centred on the judges position and flown within the performance zone = 40K
- Presenting figures in their best orientation = 40K

5.4.3. RESULTS

The result per programme is obtained by adding up the scores of each heading.

The winner of each Event in each Category will be the highest total score after deduction of eventual penalties.

5.4.4. COLLECTION OF SCORING SHEETS

The total results shall be available to the Competitors.

The current "raw results" of each flight will be announced and published on a score board to indicate the Competitors placing. If penalties have to be applied later on, then the standings can be modified at the end of the competition flights of the day.

The final evaluation and placing will be officially announced after checking by the FWGP Director.

5.4.5. PUBLIC ANNOUNCEMENTS

Prior to and after the performance of a program, details regarding the Competitor concerned should be published by any means (radio, announcer, etc...).

During the performance only music should be heard or a live and clever commentary explaining the figures or technical details but without any comment on the quality of the flights for keeping public interest alive.

All public commentaries shall not be heard by the Pilots whilst flying.

5.4.6. FINAL RESULTS - Points

- Trophies will be awarded at each contest to the first three places.

- Points will be awarded as follows to the top 7 Pilots in each Category:

1st Place	12 points
2nd Place	10 points
3rd Place	08 points
4th Place	06 points
5th Place	04 points
6th Place	02 points
7th Place	01 point

- At each contest, an aircraft manufacturer will be awarded the total number of points scored by the top solo pilot flying his aircraft (C1-Unlimited and T-Class Categories).

- No number of events has been fixed for a FAI World Grand Prix Championship (Series).

- There is a current ranking updated after each Event. The Pilot / Formation Team / Aircraft Manufacturer placed first at the end of the Championship (Series) is the Pilot / Formation Team / Aircraft Manufacturer with the highest score at this time.

- An FAI World Grand Prix Champion title will be delivered to the winners at the end of each Series. Scores will then be reset to zero.

5.4.7. DEAD HEAT

- Prizes and points awarded for all the positions of competitors who tie, will be added together and shared equally.

- If two competitors finish the season with the same number of points, the higher place in the GP Championship (in either case) shall be awarded to:

— The holder of the greatest number of first places;

— If the number of first places is the same, the holder of the greatest number of second places;

— If the number of second places is the same, the holder of the greatest number of third places and so on until a winner emerges;

— If this procedure fails to produce a result, the FAI will nominate the winner according to such criteria as it thinks fit.