



# FAI Sporting Code

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*Fédération  
Aéronautique  
Internationale*

## **Aerobatic Annex to Section 7A – Class O**

### **HANG GLIDERS CLASSES I / II / IV / V**

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*Avenue Mon-Repos 24  
CH-1005 Lausanne  
(Switzerland)  
Tél.: +41(0) 21/345.10.70  
Fax: +41(0) 21/345.10.77  
E-mail: [sec@fai.org](mailto:sec@fai.org)  
Web: [www.fai.org](http://www.fai.org)*

**Editor's note:** The FAI Sporting Code for Hang Gliding consists of the General Section and Section 7 combined, it also includes this Annex for aerobatic competition. In cases of doubt, consult the General Section to establish the principles before applying the specific rules which appear in this Section 7 document.

Hang gliding is a sport in which both men and women participate. Throughout this document the words "he", "him" or "his" are intended to apply equally to either sex unless it is specifically stated otherwise.

## **FEDERATION AERONAUTIQUE INTERNATIONALE**

**Avenue Mon-Repos 24 – CH-1005 Lausanne - Switzerland**

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# International Aerobatics Competition Rules for HG

These rules cover the technical aspects of organising, running and scoring a aerobatic competition in hang gliding. Organisers of FAI sanctioned events in this discipline should read this Annex in conjunction with the full Section 7A of the FAI Sporting Code which covers all other matters which must be addressed when running Category 1 or Category 2 events.

## Chapter 1 - Competition Rules

### 1.1 - Registration and Responsibility:

The entry fee and the number of selection and competition days will be announced in the Local Rules of the event.

Each competitor must hold an FAI sporting licence issued by the NAC he represents. Drugs are prohibited: Refer to FAI GS Rules.

Each competitor in the competition participates under his own responsibility. By signing the **liability waiver** (national law permitting), the pilot assumes the responsibility for any damage caused during the competition, the flights or transportation, to the pilot himself and to third parties.

Each competitor must hold a valid **air third party insurance**. Personal medical insurance is highly recommended.

Each competitor is responsible for his manoeuvres and should only perform manoeuvres that he has practised and that he controls.

**The senior judge and/or the technical delegate must make sure that the organiser properly checks the administrative documents: FAI licence, liability waiver if appropriate, third party liability insurance, manufacturer's authorisation, equipment verification.**

### 1.2 - Equipment:

Each nominated competitor must show an authorisation from the manufacturer to fly his glider for the current season (the form is in annex ).

A dry reserve parachute is compulsory, and should be in good condition and recently folded. After a water landing a new reserve has to be used if the reserve is wet.

A helmet is compulsory. The local rules will specify the type of helmet allowed.

Use of ballast is prohibited

In case of a broken glider not due to a loss of control, the pilot is allowed to repair or to change his glider and continue the competition.

### 1.3 – Safety

The aerobatics manoeuvres are only allowed above the water and in a designated area called “**flight box**” (pilots must take in account the drift caused by wind).

It is strictly forbidden to fly over the public (direct elimination from the competition).

## **1.4 - Emergency stop signal:**

In case of emergency, the flight box can be closed.

A sound signal and a visual signal (cross) over the raft announce that all aerobatics manoeuvres and all water landing must immediately stop. The pilot should be able to hear the sound signal.

## **1.5 - General Behaviour:**

Competitors must respect the decisions of the judges.

Competitors must respect the schedule of briefings and shuttles.

## **1.6 - Warnings and penalties:**

For safety reasons but as well for good citizenship and respect of the rules, warning and penalties may be imposed on pilots.

### **1.6.1 - Persons entitled to impose warnings:**

- The 5 judges
- The meet Organiser
- The meet Director

### **1.6.2 - When a warning can be imposed:**

At any time during the event ( Flight, Registration, Meals, Transport to the take off, at the take off, during the briefings, etc...)

### **1.6.3 - Official list of warnings:**

#### **GENERAL SAFETY:**

- Disrespect of the Flight box
- Disrespect of the signal closing the flight box
- Flying over the public
- Unauthorised take off.

#### **TAKING RISKS:**

- Loss of control
- Bad management of recovering after a lost of control
- Endangering others (raft crew)
- Unsafe landing

#### **RESPECT – GOOD CITIZENSHIP:**

- Delay at briefings
- Disrespect of the rules
- Unsporting behaviour
- Harmful behaviour towards the organisation

#### **1.6.4 - Running of the warnings:**

When a warning is imposed on a pilot, it appears on the results of the competition. Judges, Organiser and meet director keep record of the warnings.

6 warnings = 1 yellow card

2 yellow card = 1 red card

The red card induces a meeting of the Judges and the meet director to take a decision on the penalty to be imposed to the pilot including possible disqualification.

#### **1.6.5 - Point penalties:**

The 5 first warnings are not penalised

A yellow card gives a 30 points penalty

After the first yellow card each additional warning give 5 points penalty.

The total of the point penalties are shown on the Results and are deducted from the total results.

#### **1.6.6 - Announcement of warnings and penalties:**

The pilot is personally informed by the meet director when debriefing the task of the warnings he has been receiving.

Each warning and yellow or red card are displayed on the result sheet.

#### **1.7 - Pilots representation:**

During the registration 2 pilots must be elected to represent the pilots whenever needed.

#### **1.8 - Protest:**

For Category 2 events, all routines are recorded on video and will be referred to in case of a protest. To dispute a decision, the pilot must present his protest in writing with the protest fee provided for in the local rules to the meet Director who will pass it on to the judges. This fee will be returned if the protest is upheld. The pilot may personally defend his protest in front of the judges.

In case of a protest against the Judges a special Jury must be formed. It is composed of the Senior Judge and 2 elected pilots non involved in the case and especially elected for that case.

For an FAI Category 1 Championship there are 3 stages:

- The complaint: made to the Judges
- The protest with a Protest fee announced in the Local regulations. The protest will be dealt with by the FAI Jury as per Section 7
- The protest must be made in writing, in English by the Team Leader and given to the Meet Director.
- The appeal to FAI made by the NAC as per General Section.

## 1.9 - Validation of Run :

In case of difficulties (meteorological conditions, organisations, ...), the pilots' representatives and the jury meet to decide to validate or cancel the run.

The Judges may require a reflight in case scoring problems. A pilot failing to fly when requested will score zero.

Launch order will be the reverse of the current points standings. The first round will be a random drawing. If conditions deteriorate a pilot can "push" (Section 7A, 2.27.6), or pass. Failure to fly in launchable conditions may lead to disqualification.

If for any reason a run cannot be completed on one day, it may be continued on a later scheduled day.

## 1.10 – Announcement of Program Start

If, before starting the 1<sup>st</sup> manoeuvre, a pilot estimates the conditions unsafe or the altitude too low to complete the run, he notifies the Jury by a later scheduled day making a 360 on the right with the risk to get warnings if the Jury doesn't agree with his decision.

Then the pilot has to go down fast without making any aerobatic manoeuvre and land dry. In that case he will be allowed a re-flight.

This is the pilot responsibility to start or not to start his routine.

## 1.11 - Validation of the competition:

A minimum of 2 runs are required to validate the competition (Category 1 as well as Category 2)

## 1.12 - Prize money:

There should be prize money and the local regulation will announce the amount and the rule for allocating the prize money.

## 1.13 - Competition Format:

Each competition may include qualifying rounds and a final on the last day, this must be specified in the Local Rules.

The Local rules must specify which formats are going to be run among the following list:

The organiser must announce at any briefing the number of manoeuvres per flight allowing all the competitors to get time enough to perform the flight. **This number of manoeuvres is called X. Only the first attempt of a manoeuvre will be scored except for the spin where 2 attempts are allowed.**

## 1.14 - Maximum number of pilots:

From experience the following is recommended

The maximum number of pilots in a solo competition is 40



The organiser can reduce this number taking into account the site capacity and the pilot's skill.

### **1.15 - Entry fee:**

For Category 2 events

The entry fee should be limited to 25 Euros per competition day including the selection days.

The entry fee should cover:

- Take off shuttle access
- 3 meals a day
- Free access to opening ceremonies, prize giving ceremonies and supplementary events.

For Category 1 events the entry fee and the services provided will be in the Local regulations.

## **Chapter 2 Competition Formats**

### **2.1 - Competitions for Individuals:**

#### **2.1.1 - Compulsory Program**

Each pilot must execute a required routine as imposed by the Judges

The routine consists of a series of X manoeuvres . The order of manoeuvres will be imposed by the Judges.

#### **2.1.2 - Announced Program**

Each pilot must submit his routine prior to his run. The pilot may choose his routine from the list of manoeuvres by filling in the “ Announced Program” table in annex.

The maximum number of manoeuvres: cannot be exceeded and will be announced before the run. Each manoeuvre may only be performed twice within the routine (unless performed in the opposite direction i.e. left/right).

#### **2.1.3 - Expression session**

The pilot is totally free to perform manoeuvres without announcing a routine. The quantity of manoeuvres is unlimited but only the official manoeuvres are allowed.

#### **2.1.4 - The Expression Session may be scored**

- If the judges so decided
- Provided the number of runs necessary to validate the championship are valid

Expression sessions are subject to warnings from the Judges

### **2.2 - Selection rounds:**

Before the competition start selection rounds will be mandatory for all the pilots to participate in the event. The dates of the selection rounds will be indicated in the Local Rules

Each individual pilot must show his ability by performing official manoeuvres to the satisfaction of the Judges.

The aim is to demonstrate the pilot's ability to fly the competition.

If more than 40 pilots participate to the selection round, this round will become qualifying and only the 40 best pilots will be allowed to participate to the competition.

#### **Official manoeuvres to be performed during the selection rounds:**

All pilots entering the competition should be able to safely perform the following manoeuvres

- Wingover
- Spin
- Loop

### **2.3 - Other points for Judges appreciation:**

Choreography:

- Placement and drift
- Management of altitude

- Flow, rhythm, connection
- Originality, diversity

## **2.4 - Elimination if:**

- The pilots' skills are insufficient to perform the minimum required manoeuvres for the competition
- The manoeuvres are performed unsafely.
- No respect of the flight box (including the drift).
- Others safety reasons...

An eliminated pilot may lodge a protest

## **2.5 – Panel of Judges**

The panel of Judges consists of 5 independent judges, from 2 different countries.

Judges are responsible for scoring each run.

A group composed of 1 judge per country represented in the panel of judges is responsible for monitoring the judging

## Chapter 3 : Scoring

### 3.1 - Official manoeuvres

#### Definition of a manoeuvre:

A figure with a bank angle of more than 90° is considered as a manoeuvre.

#### Loop

A loop is defined here as a manoeuvre that starts in a wings level dive, climbs - without any rolling- to the apex where the glider is upside down, wings level (heading back where it came from) and then returning to the start attitude and heading -without rolling- having described an approximately circular path in the vertical plane.

Maximum score is 180 points

Tolerances: Bank angle: +/- 30 °. Exit 30° on either side of the axis

#### Spin

A spin is scored from the moment one wing stalls and the glider rotates noticeably into the spin. The entry heading is noted at this point. The glider must remain in the spin for at least 1/2 of a revolution to score any spin points. The exit must be on the principle axis or the exact opposite for the compulsory program and on either of the cross axes for the announced program.

Maximum score is 190 points

#### Rollover

A Rollover is essentially a barrel roll which is a climbing manoeuvre where the apex heading is less than 90° left or right of the entry heading and the exit heading is less than 45° left or right of the entry heading.

Maximum Score is 200 points.

#### Wingover

A Wingover is any climbing manoeuvre where the apex bank angle is 90° or more and the exit axis is 270° from the entry axis. Maximum Score is 160 points.

Exit tolerance: 60° on either side of the 270 exit axis

#### Split-S

The Split S is a climbing manoeuvre where after entry the glider rolls 180° (upside down) to an apex heading the same as the entry heading then half loops to an exit heading opposite the entry heading.

Maximum score is 180 pts

Tolerances: Bank angle 30° Exit 30° on either side of the entry axis

### 3.2 – SCORING

**The Chief Judge will present the judging criteria for each manoeuvre at the 1<sup>st</sup> Briefing**

#### 3.2.1 Compulsory program:

**Program execution points:** Refer to the official scoring sheet in annex;

The score for each manoeuvre will be 1-10 where 1 represents 90° and 10 represents 180° (flat upside down). There is no subjective score here.

**Choreography:** The technical performance takes into account the proficiency in performing the manoeuvres demonstrated, the altitude management and the safety. The axis score takes account of the deviation in the exit within the defined tolerances. The Program respect gives one point for each of the manoeuvres. The Routine points are awarded for subjective scoring of Aesthetic of the routine, Dramatic performance of the routine and Smoothness and continuity of the routine.

### **3.2.2 Announced program:**

**3.2.2.1 Program execution points:** Refer to the official scoring sheet in annex

**3.2.2.2 Choreography:** There are 2 differences with the compulsory program: The program respect gives 8 points because here the maximum number of manoeuvres is 8. The versatility is introduced to give incentives to the pilot to perform all the manoeuvres.

### **3.2.3 Expression session:**

**3.2.3.1 Program execution points:**

All the manoeuvres will be given a value on the judges card (in annex). The Judges will score the best 2 of each type of manoeuvre on the judge card. At this point the scores are transferred to the score sheet like for the announced program for totalling scores. Then the maximum number of results scores as announced by the organiser will be added to determine the total program score. The normal number of scores is between 4 and 7.

**3.2.3.2 Choreography:**

Technical performance is worth 25 pts x 1-10 to a max of 250 pts

Versatility score is worth 20 pts x 1-10 to a max of 200 pts. 2 points will be given for each of the 5 manoeuvres types the first time it is shown. This is the diversity score.

Routine score is the same as announced program except it is worth 25 pts x 1-10 to a max of 250 points

## **3.3 - TOTALLING SCORES**

Five judges will score each flight. The high and low scores for each pilot will be disregarded and the remaining three scores totalled. This is the score of the pilot's routine. In the event of only four judges being present the high and low scores will be averaged and that average will become the third score totalled. In case only 3 judges have a score, the pilot's score will be the average; All valid rounds will be totalled for each pilot to determine standings.

## **3.4 - COMPETITION BOX**

Only manoeuvres performed within the designated competition box will be scored.

Repetitive illegal manoeuvres below the floor of the box may lead to disqualification from the competition.

At the end of each routine the pilot will clear the competition box immediately.

## **Chapter 5 : ORGANISER Rules**

### **5.1 - The site.**

Aerobatics competitions can only take place above water. It is necessary to get a height of at least 500 m above water in order to perform the movement.

In case of a site above sea water, the organiser has to announce the altitude below which no manoeuvre will be authorised and will not be scored to allow the pilots to safely land on the ground landing field.

### **5.2 - Take Off:**

A necessary space must be available to spread a minimum of 2 gliders. A unit of place, and easy access as well. Easy and fast access for rescue. Possibility to use a winch (2 boats – 2 winches).

### **5.3 - Landing.**

It is necessary to have a “dry” landing. It is also possible to use a landing place on water (A protected floating platform without any sharp parts. Each side and corners must be well protected).

Wind socks must be posted at different places of the event.

**5.4 - Communication :** Radios and / or mobile phones (homologated if necessary). The start of the run must be announced to all the judges with confirmation.

### **5.5 - Site facilities**

Reception of the public in a delimited area (A parking close to the event, catering, announcers).

#### **No flight over the public.**

Headquarters with all the infrastructure for the results keyboarding, Computers, Internet access, a high performance photocopy machine, paper ( minimum 4 reams) and telephone lines. In addition Chaises longues (deck chairs) must be provided to the judges.

### **5.6 - Aerobatics area movements:**

It is the pilot's responsibility to consider the strength of the wind and to estimate its drift in case of rescue opening so that he can land in water. The beginning of the routine will start at a minimum distance from the bank. The judges, the task Director and pilot committee fix the maximum strength of wind accepted during the competition.

### **5.7 - Organisation team:**

Continuous shuttles or cable car with priority to the competitors.

A task director who must be present at landing place.

At take off : A starter who is responsible for take offs and helped by 2 or 3 assistants.

At landing field : A controller of the movement area.

A speaker for public address.

A cameraman with a camera who is permanently filming. This person must be placed next to the jury.

A secretary who assists the Jury and helps entering the results (score keeper).

### **5.8 - Briefing:**

Pilot committee election (2 pilots). The pilot committee gives his point of view on the competition and particularly on all the aspects concerning safety.

### **5.9 - Local Regulations:**

The Local Regulations must be published - see Section 7A, Chapter 2.5.

### **5.10 - Weather forecast:**

Weather forecast publication. At take off, information on the landing wind strength must be provided.

### **5.11 - Safety :**

A doctor-resuscitator on the competition area.

A permanent health care helicopter on the competition area or one that should be available within 30 min.

An ambulance at take off and one at landing place.

2 motorised boats with an easy access for the pilots.

2 divers with a double autonomous system to breathe and a "cut – lines". In case of additional show at the event two extra boats should be provided.

### **5.12 - Insurance :**

Each organiser has to check if pilots have a liability insurance covering air risks.

Each organiser must have a liability insurance.

The Insurance third party liability coverage must be 700.000 Euros or equivalent

### **5.13 - Media exposure:**

The organiser should organise an event well suited to the media, at least at a national or local level.

Information should be given to the pilots about the broadcast-dates on the different channels of the images of the competition.

### **5.14 - Panel of judges:**

The panel of judges is composed of 5 independent judges and it should be composed of at least 2 different nationalities. All the expenses of the judges are paid by the organiser (Accommodation, food, catering and travel expenses)

These 5 Judges are chosen by the organiser.

The Judges and helpers (each Judge needs a secretary) must get together during the selection day in order to harmonise the notation and to organise the working method.

The Judges must sit at a suitable distance from each other to prevent them from talking to each other.

The Judges are responsible as well for the monitoring of the event particularly with regards to the safe and fair implementation of the rules.

Disciplinary action : The Judges may take disciplinary action against a pilot who didn't respect the regulations or who executed some non controlled figures. The

sanction can be a penalty and also the expulsion from the competition. The pilot has always the possibility to lodge a protest against the decision of the judges in that case it is dealt with by the special Jury mentioned above or by the FAI Jury for a Cat 1 event.



## **Chapter 6 : LOCAL REGULATIONS**

### **6.1 - Name of the event:**

### **6.2 - Dates** including rained dates and Place:

### **6.3 - Description of the event:**

Open to individuals

Number of competition days

Date of the selection days

### **6.4 - Number of qualifying rounds and final if appropriate**

### **6.5 - Maximum number of pilots:**

And selection method

### **6.6 - Entry fee :**

amount

What is included in the entry fee

### **6.7 - Protest fee :**

Amount

### **6.8 - Prize money**

Amount

How it is awarded

### **6.9 - Daily program:** this program has to be respected.

### **6.10 - Safety:**

Type of helmet allowed in the competition

Provision for life jackets if any

Provision of spare reserve provided by the organiser

### **6.11 - Competition:**

Definition of the flight Box

Number of manoeuvres to be performed during a flight

Elimination rounds and final whether appropriate

## ANNEXES

<b>Annex 1</b> : Aerobatics Wing authorisation form	- not yet available
<b>Annex 2</b> : Scoring sheet compulsory program	- not yet available
<b>Annex 3</b> : Scoring sheet announced program	- not yet available
<b>Annex 4</b> : Judge card for expression session	- not yet available
<b>Annex 5</b> : Scoring sheet Expression session	- not yet available
<b>Annex 6</b> : Waiver	- not yet available
<b>Annex 7</b> : Drawing of the Loop	- not yet available
<b>Annex 8</b> : Spin	- not yet available
<b>Annex 9</b> : Rollover	- not yet available
<b>Annex 10</b> : Wingover	- not yet available
<b>Annex 11</b> : Split-S	- not yet available