FAI Sporting Code

Fédération
Aéronautique
Internationale

Section 7E – Class O

PARAGLIDING AEROBATICS

CLASS III

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Editor's note: The FAI Sporting Code for Paragliding consists of the General Section and Section 7B 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 7B document.

Paragliding 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.

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Contents

1 INTRODUCTION AND FLIGHT DEFINITIONS

Section 7E of the FAI Sporting Code is the subset of Section 7 (common section) dedicated to Paragliding Aerobatics Championships. This document must be read in conjunction with Section 7 and the General Section.

1.1 Flight Definitions

These definitions take precedence over the ones given in the General Section. Additional definitions relevant to paragliding can be found in the Section 7 Annex: CIVL GAP – Centralised Cross-Country Competition Scoring System for Hang-Gliding and Paragliding.

1.1.1 Launch/Take-off

The point and/or time at which all parts of the paraglider or its crew cease to be in contact with or connected to the ground or water.

1.1.2 A Flight

A flight by a paraglider starting at take-off (1.1.1) and ending with the landing (1.1.8.1).

1.1.3 Free Flight

That part of a flight, in which the paraglider is not towed, carried or assisted by another aircraft or separate external or jettisonable power source.

1.1.4 Finish of flight

1.1.4.1 The Landing

The point at which any part of the paraglider pilot, his equipment (excluding speedbar, stirrup or tow yoke), or his wing first touches the ground.

1.1.4.2 Target landing:

A landing in which the distance of the pilot's first point of foot contact is measured in centimetres from the centre of the target.

Commentaire [LJ1]: To be reviewed/adjusted. Other flight definitions to be added…

1.2 Manoeuvre Definitions

1.2.1 Helicopter

1.2.2 SAT

1.2.3 Full stall

1.2.4 Tail slide

1.2.5 Wing over

Etc.

1.3 Types of Competition

1.3.1 **Individuals (Solo)**

The winner shall be the pilot gaining the highest total points. The team winner shall be the nation team scoring the highest total points, as defined in the team scoring rules in the Local Regulations.

1.3.2 **Pairs (Synchro)**

The winner shall be the synchro pair gaining the highest total points. The team winner shall be the nation team scoring the highest total points, as defined in the team scoring rules in the Local Regulations.

1.4 Competition Validity

- The minimum number of pilots for a Solo competition is 10 pilots.
- The minimum number of pilots for a Synchro competition is 5 pairs.
- For the Championship to be valid, a minimum of two (2) runs is required to validate the competition in each category (solo and synchro).

Commentaire [LJ2]: Accuracy gives a maximum number of rounds (12) to limit the length of the event. Something to consider?

3 ENTRY TO 1st CATEGORY EVENTS

3.1 Maximum Entry

The Local Regulations shall state:
The maximum number of pilots that may be accepted in the Solo Championship.
The maximum number of pairs of pilots that may be accepted in the Synchro Championship
The maximum number of pilots that may be entered by a NAC.
The number of pilots of each gender that may be entered by a NAC (if required).
The number of pilots constituting a national team (Solo and Synchro).

A pilot who is competing in both solo and synchro competitions is counted as 2 pilots.

3.2 National Entry

3.2.1 Women

If 8 women from 4 countries participate in a World Championship, or 8 competitors from 3 countries in a Continental Championship, then women's medals may be awarded. See S7 2.5.1.

Commentaire [LJ3]: Is this ok?

3.2.2 NAC Confirmation

A responsible person from each NAC shall confirm to the Competition Organiser in writing, the selection of its competitors and Team Leader (paper letter, fax, email and online registration are acceptable).

Commentaire [s4]: Not in other sections

3.2.3 Change of pilot

After the start of the first round no change of pilot may be made.

3.2.4 The Team Leader

May be a competitor or crew but preferably should be additional to them. If a national team has pilots flying from more than one site, the Team Leader may nominate a deputy for such sites.

3.3 Eligibility to Compete

3.3.1 Qualifications

Qualification criteria for all pilots wishing to compete in a Category 1 competition are:

- If the competitor's country issues pilot licences for paragliding, the pilot must hold a valid licence; this should be equivalent to IPPI 4 standard.
- Each competitor shall hold a valid FAI Sporting Licence issued by his own NAC. Competitors from prospective FAI member countries may use a licence issued by the FAI Secretary General.
- A PG Aerobatics WPRS ranking, indicating that the pilot has competed in a FAI sanctioned event within the last 2 years.

Commentaire [LJ5]: Any other qualifications? Heli drop/de-bag? Winch endorsement?

Commentaire [LJ6]: Suggestion… for Cat 1s only.

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

- Full stall + exit
- Tail slide + exit
- Wing over
- SAT
- Helicopter

And demonstrate the following points of choreography:

- Placement and drift
- Management of altitude
- Flow, rhythm, connection
- Originality, diversity
- Synchro co-ordination (only for synchro flights)

3.3.2 **Organising Team**

No member of a NAC's organising team during a first category event may also be a competitor in that event.

3.4 World Pilot Ranking System (WPRS)

Updated monthly based on the formula calculated on the sum of the pilot's 4 best competitions in the last 3 years with time devaluation. All FAI sanctioned events are taken into account.

4 ORGANISING 1ST CATEGORY EVENTS

4.1 The Competition Site

Aerobatic competitions can only take place above water. It is necessary to get a height of at least 400 m above water in order to perform the movement.
The wind should not normally be stronger than 30 km/h.
The box must be large enough to permit, a pilot to use his rescue parachute and land safely in water.

4.1.1 **Take Off**

4.1.1.1 Hill Launch

There must be enough space available to spread out a minimum of two gliders. Easy and fast access for rescue. A launch marshal is required to control launches and communicate to the landing area.

4.1.1.2 Tow Launch

A minimum of two boats/winches is required. A launch marshal is required to control take offs to communicate with the winch/tow operators and the landing area.

4.1.1.3 Helicopter Drop

Helicopter drop can also be used in case no suitable take off is available. In this case an exit master is needed on the helicopter. The exit master and his team are responsible to check the equipment (D-Bag) of the pilot before entering the helicopter. A pilot who is not able to fly his program because of having to deploy his reserve, experiences a delay in opening the glider, or suffers equipment damage during the drop, can request a rerun. In the two latter cases he must show 'big ears' and fly to a dry landing.

4.1.2 **Landing Sites**

The principle landing place is on the raft. The size of the protected platform is at least 6m X 4m, without any sharp edges. All sides and corners must be well protected.
It is also possible to use a landing place on water. In that case a protected floating platform (10 m X 10 m) without any sharp parts. Each side and all corners must be well protected.
A separate "dry" landing site must also be available.
Windsocks must be posted at all strategic locations.
Landing sites must be situated such that pilots can reach them easily from the launch point and without having to fly over spectator areas.

4.2 Safety Team

- An emergency response team or health care team at the competition area must be available.
- An emergency health care helicopter that will be available within 30 min of contact.
- motorised boats with staff (3 - 4 for Synchro), hook knives and easy access for the pilots.
- Additional safety equipment where appropriate.

4.3 Organisation Facilities

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

Headquarters with the entire infrastructure for the results keyboarding, computers, Internet access, and a high performance photocopy machine, paper (minimum 4 reams) and telephone lines.

Each judge needs one secretary to assist him or her during the notation.

In addition deck chairs (chaises longue) must be provided to the judges.

Continuous shuttles or cable car with operators giving priority to the competitors.

4.4 Organisation Team

4.4.1 Key Team Members

An event director

A flight director who must be continuously present on landing raft during flight activity.

A competition director.

A safety director.

A launch marshal with 2 or 3 assistants.

A judging panel.

A commentator for public address.

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

A score-keeper to assist the judging panel and help enter the results.

See S7 Chapter 4 for more information on the roles and responsibilities of key members of the organising team.

4.4.2 Judging Panel

The judging panel consists of a minimum of 3 independent judges from at least 2 different countries (or 3 different countries if there are to be 4 or 5 judges). One is selected from the list of senior judges, to be the chief judge. The other judges can be nationally or internationally qualified.

The CIVL Aerobatic Committee in consultation with the organiser nominates the senior judges. The organiser has to get in contact with one of the senior judges: in case no senior judge is available, he shall contact the chairman Claudio Cattaneo judges@flyandsmile.ch for the selection of judges.

After the competition the senior judge submits a report to the CIVL Committee and must stay in contact with the organiser until the results have been validated.

4.4.3 Role of the Chief/Senior Judge

The role of the senior judge is to:

- advise the organiser on questions about FAI Rules
- check the list of registered pilots before the competition
- ensure that the competition rules are implemented
- ensure that all pilots hold valid FAI licences
- check all safety aspects of the event
- coach and train local judges and trainees
- run the pilot briefings
- report on the competition including judge training progress
- resolve scoring software problems

Commentaire [LJ7]: Cat 2 only. Jury Prez does it at a Cat 1.

The organiser is responsible for paying the chief judge (200 Euros per day), covering travel expenses and providing accommodation/food.

The chief judge is encouraged to organise training courses for new judges during and/or before the event. A student judge must have followed a theoretical training course provided by a senior judge.

4.5 Media exposure

The organiser should organise an event well suited to the media, and promoted at an international level.
Information should be given to the pilots when the media are present, and on scheduled broadcast dates/times/media when known.
See also Guidelines for CIVL Category 1 Competition Organisers document.

4.6 Local Regulations

The Local Regulations must be published according to the Section 7 template (see below). These regulations should contain all sites and meet specific information. Two months prior to the event on the official web site. And it has to be posted at the competition's information board during the event.

4.7 Insurance

Each organiser must consider what insurance cover is necessary for each competitor and include this in the local regulations for the event.

If insurance can be arranged on arrival through the organisers this should also be stated and details given.
The Local Regulations should also state what proofs of insurance the organiser will check before competition flying commences.

5 COMPETITION STRUCTURE

5.1 Schedule

The Local Regulations will include the programme for the event, including dates and approximate timings of the Practice Run and subsequent runs, whether 'Announced' or 'Restricted Announced', whether solo or synchro, and the maximum number of runs planned.

5.2 Practice Run

All pilots registered for a 1st Category event will have a WPRS ranking. However, after the Official Practice Run, the judges may decide that a pilot is not sufficiently qualified to compete.
A pilot may be eliminated 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).
- Other safety reasons…

Commentaire [LJ8]: Suggestion as for Cat 1, pilots should have a WPRS ranking, and a practice run (round/task) is specified for S7abc

5.3 Official manoeuvres

The list of manoeuvres officially allowed in a 1st Category event are listed in 1.2 above.

5.4 Qualification run and cuts

Cuts during the competition are allowed. If this is planned, it will be stated in the Local Regulations. Cuts are made after a qualification run(s).

A qualification run may be a pre-announced free program or a restricted program. Other factors taken into account during a qualification run are:

- Choreography:
- Placement and drift
- Management of altitude
- Flow, rhythm, connection
- Originality, diversity
- Synchro co-ordination (only for synchro flights)
- Landing (only for raft landing, see scoring for landing)

Cuts (elimination round) are only allowed for a final run and after having minimum 2 valid runs (with all solo pilots and synchro pairs) for a CAT 1 event.

5.4.1 Solo Competition

Commentaire [s9]: Is this only for qualification or all runs

5.4.1.1 Solo pilot 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. The number of manoeuvres is compulsory: and announced before the run.

5.4.1.2 Solo restricted announced program

The pilot may choose his routine from a list of manoeuvres decided by the judges' panel.

5.4.2 Synchro Competition

5.4.2.1 Synchro pilot announced program

Each synchro pair must submit their routine prior to the run. They may choose the routine from the list of manoeuvres by filling in the "Synchro announced program" table. The number of manoeuvres is compulsory and announced before the run.

5.4.2.2 Synchro restricted announced program

The pair may choose their routine from a list of manoeuvres decided by the judge's panel.

6 OPERATIONAL ASPECTS

6.1 Pilot Committee

At the first pilot briefing, a Pilot Committee of 2 pilots is elected by the pilots. The Pilot Committee gives its views on the organisation and running of the competition as well as safety aspects.

6.2 Safety Committee

At the first pilot briefing, a Safety Committee of 3 pilots is elected by the team leaders (by the pilots in Cat 2) to represent the views of the pilots whenever needed.

6.3 Start Order

The starting order of the first run is set either by a random draw or by flying in reverse order of pilots' WPRS ranking; to be stated in the Local Regulations. For subsequent runs, pilots will start in the reverse order of the last updated competition standing.

6.4 Announcement of programme start

Before starting the program, every pilot/team has to make one "big ear" to notify to the judges the start of the run. If, before starting the 1st manoeuvre, he estimates the conditions unsafe or the altitude too low to complete the run, the judges have to be notified by making 2 big ears"
Then the pilot has to fly down immediately to a safe landing without making any aerobatic manoeuvre.
The pilot/team will be allowed a re-flight, except when judges estimate that the pilot/team showed unsportsmanlike behaviour: in this case, warnings might be assigned. Nevertheless, it is always the pilot's responsibility when to start his routine.

6.5 Aerobatics area movements

It is the pilot's responsibility to consider at all times the strength of the wind and to estimate its drift, in case he needs to deploy his reserve parachute, so that he can land in water. The routine will start at a minimum distance from the bank. The judges, the organiser and pilot committee will fix the maximum strength of wind acceptable during the competition; to be announced at the first briefing and/or in Local Regulations.

6.6 Flight box

Aerobatic manoeuvres are only allowed above the water and in a designated area called the "flight box". Pilots must take into account the drift caused by wind.
It is strictly forbidden to fly over the public (immediate elimination from the competition).

6.7 Emergency stop signal

In case of emergency, the flight box can be closed.
A sound signal (loud enough to be heard by pilots) and a visual signal (cross and additionally a smoke bomb can be used) over the raft to announce that all aerobatics manoeuvres and all water landings must immediately stop.

6.8 Communication

Radios and / or mobile phones (homologated if necessary) can be used for the communication.
The start of the run must be announced to all the judges with confirmation.

6.9 Weather forecast

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

6.10 Validation of run

In case of difficulties (meteorological conditions, logistics etc), the pilots' representatives and the judges meet to decide to validate or cancel the run.
For any reason, if a run cannot be completed one day, it will be continued on the later scheduled day (similar conditions permitted).

7 PENALTIES, COMPLAINTS AND PROTESTS

7.1 General Behaviour

Competitors shall respect the decisions of the judges.
Competitors must respect the schedule of briefings and shuttles.
See also S7 Chapter 12 Participant Incident Policy.

7.2 Warnings and Penalties

For safety reasons but as well for sportsmanship and fair play, warnings and penalties can be imposed on pilots.

7.2.1 Persons entitled to impose warnings

- The judges for safety and competition related aspects
- The flight director for safety related aspects
- The organiser for safety and sportsmanship related aspects

7.2.2 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…)

7.2.3 Official list of warnings

7.2.3.1 General Safety

- Disregard of the flight box
- Disregard of the signal closing the flight box
- Starting manoeuvre before 1 minute after the preceding pilot has landed
- Flying over the public
- Unauthorised take off

7.2.3.2 Taking Risks

- Loss of control
- Endangering others (raft crew)
- Unsafe landing

7.2.3.3 Respect – Sportsmanship

- Delay/non-attendance at briefings
- Delay at Take Off
- Unsporting behaviour
- Harmful behaviour towards the organisation
- No ‘ear’ for program start

7.2.4 Issuing of warnings

Each judge notes the warning on his scoring sheet. The warning is valid if at least 2 judges (or 3 when 5 judges) give a warning.

7.2.5 **Point penalties**

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

1 warning = to make the pilot aware that something went wrong
2 warnings = - 5 points
3 warnings = - 30 points
4 warnings = disqualification

7.2.6 **Announcement of warnings and penalties**

Each warning is displayed on the results sheet.

7.3 Complaints and Protests

7.3.1 **Judges' Decisions**

The judges' decisions are final. All routines are recorded on video and will be referred to in case of dispute. The Competition Director may hold a conference with the judges to adjust a score in case of an obvious error, but the final scores are not subject to protest.

7.3.2 **Organiser Decisions**

For complaints and protests on decisions made by the organising team, FAI General Section and S7 Chapter 14 rules apply.

7.3.3 **Video Archive**

The organiser shall keep and archive the video footage and written notes of the judges for at least 6 months after the competition.

8 SAFETY & EQUIPMENT

8.1 Personal Responsibility

Each competitor has a personal responsibility for his own safety and those of others. He should only perform manoeuvres that he has practised and that he can control fully.

8.2 Equipment

All equipment, including glider, harness and rescue parachutes must be in perfect condition. Pilots will not be able to compete with damaged or broken lines, damaged fabric, coverings, stitching or reinforcements.

8.2.1 Glider

All competing gliders must be certified according to EN 926-1 or LTF 91-09, for shock and load tests.

8.2.2 Harness

The harness must be certified according to EN 1651 or LTF.

8.2.3 Reserve parachutes

Two rescue parachutes are compulsory: 2 classic or 1 classic and 1 Rogallo or BASE system. They must be certified according to EN 12491 (BASE system certification is not yet compulsory). Both reserve parachutes must be dry and recently repacked. After a water landing, they must be replaced by dry material.

8.2.4 Helmets

All pilots must wear a helmet certified according to either EN 966 (HPG), ASTM 2040 (Snow sports) or SNELL rs98 (Snow sports).

8.2.5 Ballast

No ballast is allowed.

8.3 Equipment Checks

The safety director, helped by the senior judge, will perform an equipment check during the pilot registration. Further checks may be made during the event. In case of non- compliance with the above regulations, the organiser may exclude the pilot from the competition.

Commentaire [LJ10]: What happens if a pilot is discovered with non-compliant equipment during the event?

9 SCORING

9.1 General

The program (or routine) consists of a series of X manoeuvres from the official list.
Each manoeuvre may only be performed once within the routine (unless performed in the opposite direction i.e. left/right).

The scoring is based on 3 sets of notes for solo competitions:
The technique during the program, the general choreography, and the landing.

The scoring is based on 4 sets of notes for synchro competition:
The technique during the program, the synchronisation of each manoeuvre, the general choreography, and the landing.

Each set of points must be averaged on a 100 points basis:
For that, the pilots' score will be compared to a maxi score or a medium score.
This averaged score will be balanced with the percentages granted to this set of points. The following percentage apply:

Solo:	
Technical	60%
Landing	20%
Choreography	20%

Synchro:	
Technical	50%
Synchronisation	20%
Landing	15%
Choreography	15%

9.2 Technical scoring

Each manoeuvre has a fixed difficulty coefficient in accordance with this table:

Official Manoeuvres	
Manoeuvres	**Coef**
Full stall	**1,00**
Tail Slide	**1,15**
SAT	**1,25**
Wing Over	**1,35**
Asymmetric Spiral	**1,35**
Looping (Inversion)	**1,50**
Asymmetric SAT	**1,55**
Dynamic Full Stall	**1,60**
Mac Twist	**1,60**
Misty Flip	**1,65**
Helicopter	**1,70**
X-Chopper	**1,70**
SAT to Helico	**1,75**
Misty to Misty	**1,75**

Mac Twist to Helico	**1,80**
Tumbling* **	**1.80**
Misty to Helico	**1,80**
Twister (Helico to Helico)	**1,85**
Helico to SAT	**1,85**
Infinity Tumbling* **	**1,95**
Rhythmic SAT* **	**2,00**
Anti Rhythmic SAT* **	**2,00**
Esfera* **	**2,20**
Synchro Manoeuvre	**Coef**
Rodeo SAT	**1,65**
Rodeo Helico	**1,70**
Bitch Switch	**1,75**
Synchro Spiral	**1,80**
Pitch Pendulum*	**1,95**

*** These manoeuvres can NOT be the last 2.
* Has to be one of the last 2 manoeuvres.

The CIVL Aerobatic Committee is empowered to continuously review these difficulty coefficients and make changes, as it considers necessary.

Execution points: Each manoeuvre is judged on a scale of 0 minimum to **100** maximum.
Manoeuvre connections, which are NOT allowed (exit in between is needed):

Helicopter to helicopter - same direction
SAT to SAT – same direction
Tumbling to infinity
Rhythmic SAT to infinity
Rhythmic SAT to tumbling
Infinity to anti rhythmic
Tumbling to anti rhythmic
Rhythmic SAT to anti rhythmic

9.2.1 **Calculation**

Calculation of each manoeuvres score for each judge:
Manoeuvres score = execution points X difficulty coefficient
3 judges average:
For each manoeuvre, the scoring software calculates the average score of the 3 judges.
This manoeuvre average score is shown in the Judging Details.

Calculation of final technical score:
A **medium score** is calculated depending of the quantity of manoeuvres and the difficulty coefficient average.
The **difficulty coefficient average** is fixed at **1,70** for every kind of task and for solo and synchro competitions.
Medium score = quantity of manoeuvres X 1,70 X 100
Average technical score = (total of the X manoeuvres / medium score)*100
Final technical score for solo = average technical score X 60%
Final technical score for synchro = average technical score X 50%

9.2.2 Synchronisation scoring (for synchro competition only)

The synchronisation of each manoeuvre is judged on a scale of 0 minimum to 10 maximum.

The judges' average is calculated using the judges' final synchronisation scores.

The **max score** to refer to is:
Max score = quantity of manoeuvres X 10
Average synchronisation score = (total of the X manoeuvres / max score)*100
Final synchronisation score = average synchronisation score X 20%

9.2.3 **Scoring of Landing**

Landing on the raft is an integral part of the competition.
It is important for the media and for the public.
The raft must be at least 4m wide and 6m long when on a lake and larger when on sea water in order to protect, as much as possible, the glider from the salt.

The judges' average is calculated from the judges' final landing scores.
The landing score for solo takes into account the following criteria and coefficients:

LANDING on RAFT for SOLO	Coef
Approach and precision	**1,0**
Raft	**1,5**
Ground spiral	**4,0**
Hand touch	**1,2**
Feet touch	**0.5**
Spin	**1,0**

Execution points: Each manoeuvre is judged on a scale of 0 minimum to 10 maximum and is multiplied by the respective coefficient.

The max score to refer to is:
Max score = 92

Average landing score = (total of the 6 manoeuvres / maxi score)*100
Final landing score = average landing score X 20%
The landing score for Synchro takes into account the following criteria and coefficients:

LANDING on RAFT for SYNCHRO	Coef	Pilot 1	Pilot 2
Approach and precision	**1,0**		
Raft	**1,5**		
SOLO Ground spiral **SYNCHRO Ground spiral**	**4,0** **5,0**		
Hand touch	**1,2**		
Feet touch	**0,5**		
Spin	**1,0**		

Execution points: Each manoeuvre is judged on a scale of 0 minimum to 10 maximum and multiplied by the respective coefficient.
Each pilot's execution will be graded separately and added.
The maxi score to refer to is:
Max score = 204
Average landing score = (total of the 6 manoeuvres / maxi score)*100
Final landing score = average landing score X 15%

9.2.3.1 Landing on the ground

The pilot committee, in accordance with the organiser, can decide to eliminate the landing on the raft in the case of rough seas, very cold water (less than 10°C) or unsafe landing conditions.
In that case, a ground landing can be scored under the following conditions:

- The pilots should be able to safely approach the landing area without over flying the public.
- A target landing gives the "raft points". The target must be 1m large.
- Ground spirals are not allowed.

Commentaire [LJ11]: Better to say diameter or square

9.2.3.2 No landing scoring

If the conditions cannot permit safe competition landing, the landing will not be scored. The landing score will be 0 for all pilots.

9.2.4 Scoring of Choreography

Choreography is scored for the entire run (including the landing).
The judges' average is calculated using the judges' final choreography scores.

The choreography score for solo takes into account the following criteria and coefficients:

SOLO CHOREOGRAPHY	Coef
Placement and drift	1,6
Management of altitude	1,0
Flow	1,2
Rhythm and connections	1,5
Originality, diversity	2,0

Each criterion is judged on a scale of 0 minimum to 10 maximum.
The max score to refer to is:
Max score = 73

Average choreography score = (pilots choreography points / maxi score)*100
Final choreography score = average choreography score X 20%
The choreography score for Synchro takes into account the following criteria and coefficients:

SYNCHRO CHOREOGRAPHY	Coef
Placement and drift	1,6
Management of altitude	1,0
Flow	1,2
Rhythm and connections	1,5
Originality, diversity	2,0
Synchro Coordination	2,0

Each criteria is judged on a scale of 0 minimum to 10 maximum.
The max score to refer to is:
Max score = 93
Average choreography score = (pilots choreography points / maxi score)*100
Final choreography score = average choreography score X 15%

9.2.5 Total Points.

All the different scores will be added to obtain a score based on 100. The score will be rounded to 1 decimal place.

Final pilot score = Final technical score
\+ Final landing score
\+ Final choreography score

Final synchro score = final technical score
\+ Final synchronisation score
\+ Final landing score
\+ Final choreography score

9.2.6 **Criteria of Technical Evaluation**

The manoeuvres' table is the reference for the season. Only the official manoeuvres defined in the manoeuvres' table can be scored in every run.

The manoeuvres' table includes for each manoeuvre.

- The manoeuvre's **name** and its **difficulty** coefficient,
- The **criteria of technical evaluation** that is the reference for the execution score.
- The **imperative**: minimum requirements to validate the manoeuvre.
- The **penalties**: reference for discount in execution scoring.

9.2.7 **Penalties:**

The following criteria are recommendations. It is up to the judges to appreciate the context in which the problem happens, its importance and the way the pilot handles the situation.

9.2.7.1 Collapses / Tucks:

0 % to 25% => 0 to -20 points for the manoeuvre
25% to 50% => -20 to -50 points for the manoeuvre
50% to 100% => -50 to -80 points for the manoeuvre

9.2.7.2 Change of direction:

< 90° => 0 to -20 points
90° to 180° => -20 to -50 points
> 180° => -50 to -80 points

9.2.7.3 Cravat:

In the case of a cravat, the judges take into account how the pilot manages the situation.

Fast recovery and keeping the wing under control is required.

Cravat penalty:
Cravat <10% and <3 seconds => -20 points
Cravat >50% and >3 seconds => -20 to -80 points

9.2.7.4 Twist:

In case of a twist, the judges take into account how the pilot manages the situation.
< 1 turn => -20 to -50 points
1 turn and more => -50 to -80 points

9.2.7.5 Loss of control:

0 (zero) points for the run

A loss of control is a momentary lapse of time where the pilot doesn't have the control of the situation: a problem with the glider (collapse, cravat…) or twist causes the pilot some unexpected and uncontrolled trajectories.
The judges consider the pilot has gone too far and into a dangerous situation.

Commentaire [LJ12]: This wording could be improved. Suggest something like:
A loss of control is defined as unexpected behaviour of the glider, typically due to a collapse, twist, cravat etc which interrupts the routine and which the judges determine has put the pilot into a dangerous situation

9.2.7.6 Opening of the reserve (rescue parachute):
0 (zero) points for the run

9.2.7.7 Not opening the reserve or delayed deployment when needed:
0 (zero) points for the run + Warnings

10 CATEGORY 2 PARAGLIDING AEROBATICS EVENTS

See Chapter 16 of Section 7 (common section) for general rules and sanctioning requirements. The rules for Second Category events shall be based as far as appropriate on those for First Category events and must not conflict with them in principle. Some additional points for PG Aerobatics events are included here.
Rules for Aerobatic Paragliding World Tour (APWT), which are also FAI Category 2 events, are contained in Appendix 3.

10.1 Sanction Application

For a Category 2 event, the Event Title (and Local Regulations) must state whether the competition is open to individuals (solo) and/or synchro pairs. The organiser must specify on application form the name of the senior judge.

10.2 Validation

A minimum of 1 run (solo and synchro) is necessary to validate the competition so that WPRS points are awarded.

10.3 Number of Pilots

The organiser must specify the maximum number of places in each competition solo and synchro.
A pilot who is competing in solo and synchro is counted as 2 pilots.
The minimum number of pilots for a Solo competition is 10 pilots.
The minimum number of pilots for a Synchro competition is 5 teams.

The organiser can use the following mechanisms to limit the number of pilots entering the competition:

- Priority in WPRS ranking order (published 6 weeks before the competition)
- Registration or entry fee payment order
- A qualification run just before the start of the competition. See 3.3 for further information.

This must be announced in the Local Regulations.

10.4 Entry Fee

The entry fee is defined by the organiser, but a maximum of 35euros per competition day is recommended for category 2 events (except APWT, see Appendix 3). The entry fee should cover:

- Take off access
- Free access to supplementary events

10.5 Document and Equipment Checks

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 and third party liability insurance. He must also ensure pilot equipment is checked.

10.6 Briefings

Pilots are required to attend all briefings. If for any acceptable reason (plane delay...), a pilot cannot attend a briefing he must nominate someone to represent him and inform the judges following this procedure:

- As soon as possible before the first pilots' briefing, inform the organiser.
- The organiser will inform the senior judge.

- After the first pilots' briefing inform the pilots committee and/or the senior judge.
- When the pilot arrives in the competition area he must contact the senior judge to explain what happened. The judges will decide how to proceed.

10.7 Typical Schedule

- Safety selection: Safety selection manoeuvres
- Qualification Run: Restricted or announced program(Does not count for the scoring)
- 1st Task Restricted or announced program
- 2nd Task Restricted or announced program
- 3rd Task Announced program
- 4th Task Announced program

10.8 Safety Selection

The aim is to demonstrate that the pilot is capable of flying the competition safely.
The program of safety selection flight manoeuvres will be decided by the judges and pilots will be informed during the main briefing.
Safety selection is compulsory for all pilots who have not previously been ranked in any FAI competition. Pilots who already appear in the WPRS do not need to participate in the safety selection.

10.9 Prize money

The Local Regulations will state the amount and distribution of prize money. For APWT events the minimum prize money is fixed. See Appendix 3.

11 Aerobatic Paragliding World Tour (APWT)

The APWT represents the highest level FAI Category 2 competition in paragliding aerobatics. The APWT is organised every year to include 3 to 5 major events chosen by the CIVL Aerobatics Committee.
All competitions selected for the APWT are to be Category 2 sanctioned so that they will be included in the CIVL solo and synchro WPRS rankings.
A separate APWT ranking will also be calculated.

11.1 Competition Format

APWT events may follow either of the two competition and scoring concepts listed below. The choice is made by the organiser of the event in agreement with the appointed senior judge.
The standard competition format, as defined in Chapter 5
The "APWT Evolution" competition format, as defined below
For "APWT Evolution" competition format, a reliable wireless connection and a big screen for results display shall be provided on the competition area

11.1.1 Number of pilots

The minimum number of pilots:

- For a solo only competition: 20 pilots.
- For solo and synchro competition: 20 solo pilots and 10 synchro pairs

The maximum number of pilots/synchro pairs :

- 40 solo and no synchro
- or 30 solo and 20 synchro pairs
- or 30 synchro pairs and no solo

Cuts are allowed to reduce numbers to a minimum of 8 pilots / 5 pairs. The organiser and the judges will inform pilots on the application of cuts during the first competition briefing.

Pilots can participate in both competitions at the same time, but it is highly recommended to attend with two complete sets of equipment (reserve and glider).

11.1.2 Selection Method

Online registration is open until 6 weeks before the event starts.
If there are more pilots than the maximum allowed by the organiser, the pilots will be selected based on the WPRS (for synchro pairs: based on the best pilot's position in the WPRS).
The pilots will receive a response from the organiser 4 weeks before the event starts.
For pilots with no ranking and/or unknown to the judges, a **safety selection flight** is mandatory.

11.1.3 Selection Run

When more than the prescribed number of pilots are registered, a selection run will be performed, and will be valid as the first run. 50% of the places are fixed for WPRS ranked pilots. The other 50% will be selected through the selection run.

Commentaire [LJ13]: This rule seems to be at odds with the previous rule.

11.1.4 Amount of Entry Fee

Solo : 200 € max / pilot / competition
Synchro : 200€ max / pilot / competition.
Solo + Synchro: 300 € max / pilot / competition

Including as a minimum: breakfast and lunch pack and transportation to take off.
The organiser can set a lower entry fee.

11.1.5 Number of Competition Days

Minimum **3** days (including safety selection flights)

11.1.6 Number of Tasks per Day

At least 1 in each category (providing conditions are suitable).
The organiser should note that the maximum number of runs per day for one pilot is limited to 3.

11.1.7 Prize Money (minimum amount)

The organiser is encouraged to increase the prize money fund if possible.

Rank	Solo	Synchro
1st	750 €	1.500 €
2nd	500 €	800 €
3rd	250 €	500 €
4th	175 €	200 €
5th	125 €	
1st woman (if at least 3 women are competing)	250 €	n.a.
Subtotal	**2.000 €**	**3.000 €**
Total	**5.000 €**	

Organisers are recommended to allocate prize money and/or other prizes to as many pilots as possible. The organiser should pay using euros.

11.2 Manoeuvres for an APWT competition

11.2.1 Rule for standard APWT competition format:

The pilots may fly the same manoeuvre only once (in each direction) during the whole solo competition until the last run. For example: He can fly Helico left and Helico right. Manoeuvres that may NOT be performed to both sides are Full Stall, Tail Slide, Wing Over, Dynamic Full Stall, Misty to Misty, Twister, Trippy and Infinity. The same rule applies to synchro competitions with the exception of the synchro manoeuvres which teams are allowed to perform twice during the whole event.

11.2.2 Rule for the "APWT Evolution" competition format:

A manoeuvre can be flown several times during the same competition. Nevertheless, every repetition of a manoeuvre to the same side will result in a reduction of 13% to the choreography score. Exceptions: Tail slide, Full stall, Dynamic full stall and Pitch Pendulum can be performed more than once without penalty.
During every run up to 2 specific manoeuvres can be performed "twisted" as part of the last 3 manoeuvres of the run. A manoeuvre performed "twisted", will increase the choreography mark as follows:

- + 5% for twisted misty flip or misty to helico
- + 7 % for twisted stall or twisted looping
- + 9 % for twisted sat to heli, heli to sat
- + 11% for twisted tumbling, rhythmic SAT, infinite tumbling, anty rhythmic, esfera

11.3 Judging Panel

The Judging panel shall comprise at least 1 senior judge and 2 qualified judges. It is recommended to have 2 other training judges.

11.3.1 **Judging Decisions**

For APWT Evolution Format Category 2 events, all judges' decisions are final. No complaints or protests are allowed.

11.4 Scoring

The final score of the run is the total of the 5 judges' scores to which the 2 extreme scores are removed keeping the 3 remaining.
If only 4 judges are available, average the 2 extreme scores and include this average score and the 2 remaining scores.
If only 3 judges are available, the final score of the run is the sum of the 3 judges' scores.

Commentaire [LJ14]: This said 'overage', presumably it should be sum? Not 'average'?

The points collected by the solo pilot/synchro pair during all runs of every competition of the season are added to obtain the Overall APWT ranking for the solo and synchro category. The solo pilot and synchro pair who have achieved the highest number of points, will be named "Winner of the Aerobatic Paragliding World Tour (APWT)".

Overall Nations Cup Classification: the APWT Nations Cup will be awarded to the national team that achieves the highest total of World Tour points during the course of a season adding the top 4 competitors' points from the overall solo classification.

11.5 Judging Fees

The chief judge is paid 300 euros per day by the organiser (expect to include the work that has to be done on the registration day).
The other qualified judges are paid 150 euros per day.
All travel expenses (up to 150 euros), the organiser reimburses accommodation and wages of the 3 qualified judges.

Commentaire [LJ15]: Should this say competition day – they don't get paid for rego day, presumably, but must be there? Clarify.

11.6 The "APWT Evolution" Competition Format

11.6.1 **Selection**

The "APWT Evolution" competition format is a combination of standard runs and direct elimination runs.
When more than 30 pilots register to a solo competition, a selection cut is operated during run 1, which is open to all pilots who already appear in the WPRS. The top 15 ranked of the last updated WPRS and/or APWT are guaranteed to be qualified for run 2. Pilots who don't appear yet in the WPRS will be previously selected through a safety selection flight.

11.6.2 **The Runs**

The competition usually consists of unannounced or announced free program runs, with no limitations in quantity and type of manoeuvres (with the exception that the manoeuvres marked with * in the Manoeuvres board Appendix 1 cannot be performed as a last or penultimate) and no restriction about the connections listed in Chapter 4.2. Pilots are completely free to express themselves without having to interrupt their program until the landing on the raft (or on land, when no raft is available).

Nevertheless, for safety or other reasons, the judge panel is entitled to insert technical limitations to the program of every run.

11.6.3 **Draw**

Typical competition schedule (example with more than 30 pilots / 12 teams):

11.6.3.1 SAFETY SELECTION FLIGHTS

For all pilots who are not yet rated in the WPRS (according to Chapter 3.1 and 3.2).

11.6.3.2 RUN 1 / SELECTION

(When more than 30 pilots are registered). Starting order is on the basis of the reversed last updated WPRS ranking. All pilots who are in the top 15 of the current FAI WPRS and/or in the top 15 of the last updated FAI APWT ranking are guaranteed to be qualified for run 2, regardless of their score in run 1 / selection. Additional pilots, to reach a maximum of 30, will be qualified for run 2 according to the result obtained during run 1 / selection. All other pilots are eliminated.

11.6.3.3 RUN 2

With 30 pilots and 12 teams: one against one, direct elimination (battle). Couples are formed on the basis of the ranking after run 1 / selection (first against last, second against second last…) or. Qualified for run 3 are the 15 pilots and 6 teams winning their run 2 battle + 5 pilots and 4 teams who lost their series with the best score (lucky losers). 10 pilots and 2 teams are eliminated.

11.6.3.4 RUN 3

With 20 pilots and 10 teams remaining: one against one, direct elimination (battle). Couples are formed on the basis of the ranking after run 2 (first against last, second against second last…). Qualified for the final run are the 10 pilots and 5 teams winning their run 3 battle + 2 pilots and 3 teams who lost their series with the best score (lucky losers). 8 pilots and 2 teams are eliminated.

11.6.3.5 FINAL RUN

With 12 pilots and 8 teams remaining: the pilots/teams will start in the reverse order of the ranking after run 3, which is based on the sum of the points obtained during all preceding runs

Remarks:

The format of the competition can be modified depending of the number of pilots/teams, the number of scheduled competition days, and in case of doubtful weather forecast.

If the competition can't be completed according to the program (due to bad weather or any other reason) the ranking after the last completed run will become the final ranking.

11.6.4 **The Scoring System**

The judging panel consists of a group of 5 to 8 persons:

- 3 FAI qualified judges
- 0 to 5 VIP judges chosen from, journalists, representatives of sponsors, authorities, non participating or already eliminated pilots…

Every judge gives 3 marks (from 1 to 10, with half points) for the solo discipline and 4 marks for the synchro. The final mark is composed of the scoring average of the FAI judges (importance 80%) and - when applicable - the scoring average of the other judges (importance 20%).

Variation: when a sufficient number of spectators is present on the event area (final runs), a portion of the score is defined by the applause and cheering of the audience. After the pilot/team has landed, the speaker invites the spectators to applaud and cheer. The decibel value is measured or estimated, and integrated to the score (with an importance of 5%, FAI judges is then accordingly reduced to 75, VIP judges importance remaining at 20%)

Commentaire [LJ16]: This is different to the point above about judges and scoring. Maybe need to label the points above (11.4) as for 'standard' rather than 'evolution'?

11.6.4.1 SOLO COMPETITION:

1. **Technical expression** (40% of the final mark).

All manoeuvres performed are judged according to the criteria, coefficients and deductions defined by chapter 4, and the official manoeuvres board (Appendix 1) but there is no penalty for any kind of connections and no limitation in number and type of manoeuvres. An average score of all manoeuvres is defined. This score is then multiplied by the average coefficient, which is calculated on the 3 manoeuvres with the highest coefficient flown during the run.

2. **Choreography (40% of the final mark).**

Judging criteria:

- Placement and drift, number of manoeuvres, management of altitude (3/10)
- Flow, rhythm, connections, originality, diversity, style, emotional impact of the run (7/10)

3. **Landing (20% of the final mark).**

Judging criteria:

- Approach and precision of the raft landing (3/10)
- Ground spiral (5/10)
- Other tricks: hand and foot touch, spin (2/10)

11.6.4.2 SYNCHRO COMPETITION:

1. **General technical expression (30% of the final mark)**
2. **Choreography (30%)**
3. **Landing (20%)**
4. **Synchronisation (20%):**

Judging criteria based on the average of the synchronisation achieved during all single manoeuvres (5/10) and an appreciation of the general synchronisation (5/10)

Remark: the importance of the coefficients can be modified depending on local factors. Information about the actual coefficients will be provided at the latest during the main briefing.

11.6.5 CUT COMPENSATION POINTS

After a pilot/pair has been eliminated (cut), for each remaining run of the competition compensation points will be awarded. The cut compensation points for a run are the average of the points collected by the pilot/pair during all runs completed before elimination, or the lowest score that was attributed during the runs flown after elimination (whichever is lower).

11.6.6 WARNINGS

The group comprising FAI judges, the flight director, the safety director and the organiser are entitled to assign warnings according to the FAI rules. A warning becomes effective when assigned to a pilot by at least 2 FAI judges or by at least 50% of this group:

- 1st Warning: 0.5 point will be discounted from the run result
- 2nd Warning: 1 additional point discounted from the run result

- 3rd Warning: disqualification of the pilot.

11.6.7 **Scoring Software and Results Display**

The marks given by the judges are entered in a software program especially created for aerobatics paragliding. The score of each pilot is available within 1-2 minutes after landing. The marks are displayed in real time on a big screen and the overall intermediate results are updated simultaneously. The system can be adapted at any time for any kind of competition run development.

11.6.8 **Schedule & Timing**

Calculation on base of 7 minutes spacing between 2 pilots (30x7 = 210 minutes >>> approximately 3 ½ hours for a complete solo qualifying run) and 8 minutes between 2 teams (12x8 = 96 minutes >>> approximately 1 ¾ hour for a complete synchro qualifying run).

Example 1:
Typical schedule for a 3 days competition solo (with more than 30 pilots) + synchro (12 teams)
THURSDAY

- Safety selection flights
- Registration
- Main briefing

FRIDAY

- 09:30-13:30 Run 1 / selection solo (30+ pilots)
- 15:30-17:30 Run 1 synchro (12 teams, start of one against one phase)

SATURDAY

- 09:30-12:30 Run 2 solo (30 pilots, start of the one against one phase)
- 14:30-16:30 Run 2 synchro (10 teams, 6 winners + 4 lucky losers)

SUNDAY

- 10:00-12:30 Final run solo (20 pilots, 15 winners + 5 lucky losers)
- 14:30-16:00 Final run synchro (8 teams, 5 winners + 3 lucky losers)
- 17:00 Prize giving ceremony

Example 2:
Typical schedule for a 3 days competition solo only (with more than 30 pilots) and no synchro
THURSDAY

- Safety selection flights
- Registration
- Main briefing

FRIDAY

- 09:30-14:00 Run 1 / selection solo (30+ pilots)
- 15:00-18:30 Run 2 solo (30 pilots, start of one against one phase)

SATURDAY

- 10:00-13:15 Run 3 solo (26 pilots, 15 winners + 11 lucky losers)
- 14:30-17:15 Run 4 solo (22 pilots, 13 winners + 9 lucky losers)

SUNDAY

- 10:00-12:30 Run 5 solo (18 pilots, 11 winners + 7 lucky losers)
- 14:00-15:30 Final run solo (15 pilots, 9 winners + 6 lucky losers)
- 17:00 Prize giving ceremony

Example 3:
Typical schedule for a 3 days competition synchro only (with 12 teams) and no solo
THURSDAY

- Safety selection flights
- Registration
- Main briefing

FRIDAY

- 10:00-12:00 Run 1 synchro (12 teams)
- 14:00-16:00 Run 2 synchro (12 teams)

SATURDAY

- 10:00-12:00 Run 3 synchro (12 teams)
- 14:00-16:00 Run 4 synchro (12 teams, start of one against one phase)

SUNDAY

- 10:00-12:00 Run 5 synchro (10 teams, 6 winners + 4 lucky losers)
- 14:00-15:30 Final run synchro (8 teams, 5 winners + 3 lucky losers)
- 16:00 Prize giving ceremony

11.6.9 **Final Results**

In addition to sending the results to the CIVL Competitions Co-ordinator, the Aerobatic Paragliding World Tour (Acro World Cup) organisers must send to Claudio Cattaneo the results the same day they are official at the following address: results@flyandsmile.ch

11.6.10 **Aerobatic Paragliding Masters**

At the end of every season (but before the 15th of May of the following year) a contest restricted to the very best pilots can be organised. It is open to the top 10 solo pilots and synchro pairs of the APWT ranking and of the last updated WPRS. Additionally, some wild cards can be assigned by the organiser. The competition, conducted under the APWT Evolution format, does not count for APWT or WPRS points. The winner is named "Aerobatic Paragliding Master".

Commentaire [LJ17]: Do you mean: plus the top ten pilots in the last updated solo and synchro rankings? Not clear.

Appendix 1 - Official Manoeuvres Board SOLO & SYNCHRO

MANOEUVRE	Coef	DESCRIPTION, IMPERATIVE	TECHNICAL EVALUATION CRITERIA	CONNECTIONS
Full Stall	**1,00**	Full stall No required duration	Entry, control of pendulum movement control of direction and exit or connection	- -
Tail Slide	**1,15**	Backward flying with open glider Min. 3 seconds	maintenance of the shape, stability perceptible backwards flight, control of direction, duration, exit or connection	
SAT	**1,25**	Equilibrated SAT rotation Min. 2 rotations in SAT	Entry, angle of wing (90° for max score), low sink rate exit or connection (no collapse penalty for tip collapse during exit)	no connection to combo manoeuvres
Wing Over	**1,35**	Series of pendulum turns with change of direction each time Min. twice to one side, twice to the other side with great angle (min. 135°)	Rhythm, flow, trajectory angle (minimum 135 ° for maximum score – the higher the better)	
Asymmetric Spiral	**1,35**	Series of pendulum turns in the same direction each time	Rhythm, flow, trajectory angle (135 ° for maximum score- the higher the better)	
Looping	**1,50**	Entry from asymmetric spiral or a normal spiral - Reversal of a revolution that make the pilot turn around the wing on a pitch movement. min. angle : 135°	Entry, energy, timing, flow, trajectory (pitch movement) angle (180 ° for maximum score), exit or connection	
Asymmetric SAT	**1,55**	Entry from say spiral or wing over in same direction (old school)	energy, timing, flow, trajectory (SAT rotation), angle (135° for maximum score), asymmetric dynamic exit (no collapse, no stall)	
Dynamic Full Stall (Super Stall)	**1,60**	Straight climb Min. 1 rotation (min. 45° backwards pitch) + full stall No required duration	Energy, importance of pitch (pitch 90° for maximum score), control of direction and exit or connection	
Mac Twist	**1,60**	Spin from spiral maintained until pendulum stabilisation. Minimum 90° for maximum score	Energy and asymmetry on entry, speed and importance of rotation, pendulum stabilisation, fast exit or connexion	

MANOEUVRE	Coef	DESCRIPTION, IMPERATIVE	TECHNICAL EVALUATION CRITERIA	CONNECTIONS
Misty Flip	**1.65**	straight entry & climbing, 360° spin, straight horizontal shooting, exit not more than 180° form the direction of the entry	importance of pitch on entry, 360° rotation, maintenance of shape, strong shooting no rotation on entry and exit, direction.	
Helicopter	**1,70**	Perfect spin with open glider and vertical axe of rotation. Min. 3 rotationss	maintenance of the shape, stability of rotation axis (vertical) speed of rotation, low sink rate, duration, exit or connection	no connection to combo manoeuvres (twister, Helico-sat…)
X-Chopper	**1,70**	Entry with a lot energy, constant & rapid climbing, min. 90°, min. 360° spin, strong shooting, exit shooting not more than 270° from the direction from the entry	Importance of pitch on entry, min. 360° rotation, energy, maintenance of shape, strong shooting	
SAT to Helico	**1,75**	Min 2 SAT rotations + connection to min 3 Helico rotations	Sat criteria (/30 pts) + Helico criteria (/30 pts) + connection (/40 pts): flow and speed of transition	no connection to Helico
Misty to Misty	**1,75**	same criteria for the misty, transition: use the same energy to the first misty for the next one	Direction must be changed	
Mac Twist to Helico	**1,80**	Radical negative spin from spiral maintained to Helico. Min 3 rotations Helico	Mac twist criteria (/30 pts) + Helico criteria (/30 pts) + connection (/40 pts): flow and speed of transition	no connection to Helico
Tumbling ***	**1,80**	Asymmetric or inversion entry , perfect pitch movement Min 1 rotation	Energy on entry, timing, flow, Trajectory (pitch movement), angle (180° for max score, minimum 135°), exit or connexion	no connection to infinity
Misty to Helico	**1,80**	Same criteria for a misty flip, min. 45° climbing before rotation + transition to Helicopter + Helico criteria	Misty Flip criteria (/30pts) + Helico criteria (/30 pts) + connection (/40 pts): flow and speed of transition	no connection to Helico
Twister (Helico to Helico)	**1,85**	Helico one side to Helico other side Min 3 rotations each side	1st Helico (/30 pts) + 2nd Helico (/30 pts) + connection (/40 pts): speed of transition	no connection to Helico

MANOEUVRE	Coef	DESCIPTION, IMPERATIVE	TECHNICAL EVALUATION CRITERIA	CONNECTIONS
Helico to SAT	**1,85**	Min 3 Helico rotations + connection to min 2 SAT rotations. No rotation in entry and exit	Helico criteria (/30 pts) + SAT criteria (/30 pts) no rotation on entry and exit, direction.	no connection to simple SAT
Infinity Tumbling * **	**1,95**	Series of perfect Tumbling (pitch movement) Min entry plus 5 rotations	Rhythm, flow, trajectory (no roll movement), tension in the lines and glider, duration, exit or connexion	no connection to Tumbling, Anti Rhythmic
Rhythmic SAT * **	**2,00**	Entry without pitch, constant progression Minimum 135 ° in the best rotation, 180° for maximum points + 1 straight rotation at the end	Rhythm and regularity of the variation of the axis, flow, angle, exit or connection	no connection to Tumbling, Infinity and Anti Rhythmic
Anti Rhythmic* **	**2,00**	Entry by a tumbling, Minimum 135 ° in the first rotation (180° for maximum points) + 1 SAT rotation at the end	Rhythm and regularity of the variation of the axis, flow, angle, exit or connextion	
Esfera* **	**2,20**	Rhythmic SAT pulled to the vertical and followed by an Anti Rhythimc to the other side	Rhythmic SAT criterias (/50 pts) + Anti Rhythmic criteria (/50 pts)	
SYNCHRO MANOEUVRES				
Rodeo SAT	**1,65**	Synchronised and rapid entry, proximity of the wings flow duration, exit	Min. 2 revolutions around the SAT at the same altitude	
Rodeo Helico	**1,70**	Synchronised and rapid entry, proximity of the wings flow duration, exit	Min. 2 spiral revolutions around the helicopter at the same altitude	
Bitch Switch	**1.75**	Synchronised and rapid entry, proximity of the wings flow duration, synchronised and rapid switch, exit	Min. 2 spiral revolutions around the SAT at the same altitude for each pilot swinging	
Synchro Spiral	**1,80**	Synchronised and rapid entry, proximity of the wings, duration, high sink rate, rapid and controlled exit	Min. 2 revolutions max. distance is one paraglider line length in between (approx. 10 m)	
Pitch pendulum Synchro (Moline)*	**1,95**	Rapid and synchronised entry, pilots should be vertically aligned for max. score	Min. twice one over the other one The manoeuvre has to be one of the last 2 manoeuvres	

LANDING MANOEUVRES			
Approach and precision	**1,0**	Touch the raft for maxi score	Quality of the approach and precision (distance to the raft)
Raft	**1,5**	pilot standing for maxi score	Landing well on the raft
Ground spiral	**4,0**	Min. 360° revolution, height of wing tip below 3m at the lowest point	Entry (speed, sink rate), height of wing tip over water (touch for max. score)
Synchro Ground Spiral	**5,0**	Min. 360° revolution, height of wing tip below 3m at the lowest point	Entry (speed, sink rate), height of wing tip over water (touch for max. score) very close to each other
Hand touch	**1,0**		Precision, length of touch with hands…
Feet touch	**0,5**		Precision, length of touch with foot…
Spin	**1,0**	Min. rotation: ½ turn before pilot's landing	speed of rotation, good sink rate and standing landing
CHOREOGRAPHY			
Placement & Drift	**1,6**	For max. score: Start the program considering the drift of the routine and end up with enough altitude for the (+ spiral) landing close to the raft.	
Management of Altitude	**1,0**	Managing all manoeuvres of the program and using all the altitude available.	
Flow	**1,2**	Each manoeuvre has to be flown fluently and round with a good management of the energy.	
Rhythm & Connection	**1,5**	Rhythm and connection means a good management of the energy between the manoeuvres.	
Originality & Diversity	**2,0**	Good originality and diversity is using all of spin/stall/dynamic manoeuvres. Also going to both sides left and right. Using different entries for manoeuvres. Appeal to public.	
Synchro Coordination	**2,0**	Have the same altitude when performing the manoeuvres. Keeping together, not far away from each other. Starting/ending manoeuvres simultaneously.	
PENALTIES: Collapse :		**Cravat :**	**Change of direction :**
0 to 25% => 0 to -20 points		cravat <10% and <3 seconds => -20 points	<90° => 0 to -20 points
25% to 50% => -20 to -50 points		cravat >50% and >3 seconds => -20 to -80 points	90° to 180° => -20 to -50 points
50% to 100% => -50 to -80 points			>180° => -50 to -80 points
***this manoeuvre cannot be performed in the last two positions * this manoeuvre has to be one of last 2			

APPENDIX 2: LOCAL REGULATIONS TEMPLATE

1. Title of the event

2. Dates and Venue

Including training dates, venue and launch method.

3. Organiser

Names and contact details of main organiser. List of key personnel.

4. Description of the event

Open to synchro pairs and/or individuals. Competition format.
Outline programme:
Number of competition days, maximum number of runs planned
Date and time of physical registration, equipment checks, the first/main briefing, Prizegiving etc.
Typical daily schedule.

5. Registration

Dates and deadlines for online registration, website etc.

6. Maximum number of pilots and selection method

Maximum number of pilots:

Selection method applied:

- WPRS
- Qualifying run
- Order of registration (date)

The organiser may define a deadline for the payment of the registration fee

7. Entry fee

Amount.

What is included in the entry fee: (transport to launch, lunch pack etc)

8. Prize money

Amount

How it is awarded

9. Registration Requirements

Insurance

The following wording is recommended:

It is the responsibility of each competing pilot to ensure that he has valid insurance cover as follows:
Public liability risk: ..... (Organiser to specify requirement)
Personal accident/hospitalisation/repatriation..... (Organiser to specify requirement)

10. Competition Aspects

Definition of the flight Box

GLOSSARY OF TERMS AND ABBREVIATIONS

This section amplifies a number of terms which are used in the main text and gives some generally accepted definitions and abbreviations relevant to air sports

Alphabetical

2D GPS	GPS model which does not include altitude encoding in the track log
3D GPS	GPS model which includes altitude encoding in the track log
Aircraft	See Chapter 2 for definitions, page 2 - 1
Altitude	The vertical distance from mean sea level (MSL). See also `QNH', and `Height'.
AMSL	Above Mean Sea Level
ASC	Air Sport Commission responsible for a specific Sporting Code section.
AUW	All Up Weight / Mass
C	(Temperature) - Celsius
Certification	The signature on and preparation of certificates and other documents concerned with the process of flight verification with a view to validation of an FAI Flight Performance
CIVL	Commission Internationale de Vol Libre, the International Hang Gliding Commission
C of A	Certificate of Airworthiness
CP	Control Point
FAI	Fédération Aéronautique Internationale, with its headquarters in Lausanne
g	Acceleration due to gravity (9.81 m/sec^2)
G	Multiple of gravity force on an aircraft under acceleration
Galileo	The future European GNSS system, equivalent to the Russian GLONASS and the US GPS satellite navigation systems
Geodetic Datum	The mathematical model of the earth (and its orientiation to the earth) which is used in laying out the positional reference system (lat/long, kilometre grid, etc) before the map projection process is used to transform the three-dimensional surface of the earth model (including topographical features and the reference grid) into a flat map sheet. Some 200 Geodetic Datums (GD) are in current use and generally were chosen for the `best fit' of their particular mathematical model to the shape of the earth over the map area concerned. Lat/long figures, to be unambiguous, should quote the GD used which is normally given in the data at the edge of each map. The WGS 84 Datum is generally accepted as the best simple mathematical model for the overall shape of the earth, and is an ellipsoid with an equatorial radius of 6378.1370 km and a polar radius of 6356.7523 km, and is centred on the earth's centre and orientated to the spin axis. PC-based transformation programmes are available which convert latitudes and longitudes from those relevant to one Geodetic Datum, to WGS 84 or other Datums. Differences vary from a few metres to a few kilometres. These differences are not errors, each lat/long figure is perfectly correct, it is only the different GD (world mathematical model) which changes the lat/long figures for a given point on the earth's surface. Therefore, for distance calculations to be accurate, the lat/longs of points at the beginning and end of the leg concerned must be with respect to the same G (see GS para 7.3.1.1). The calculations themselves use these standardised lat/longs, applied to a distance calculation formula based on the FAI earth model given in GS para 7.3.1.1. The WGS 84 Datum can be used in deriving lat/longs for long distance calculations and is used by ICAO and national aviation agencies in defining highly accurate standardised runway datums for the future use of GPS as a runway approach aid.
Geodesic	The shortest distance between two points on the surface of an ellipsoid.
GLONASS	Global Orbital Navigation Satellite System, the Russian GNSS system similar to the US GPS

GNSS	Global Navigation Satellite System (Generic term for all systems such as the Russian GLONASS and the US GPS)
GPS	Global Positioning System (US GNSS System presently managed by the Department of Defense)
GPS (2D)	GPS model whose track log does not include altitude coding.
GPS (3D)	GPS model whose track log includes altitude coding.
GS	The General Section of the FAI Sporting Code
Height	The vertical distance from a given height datum such as the take-off place. See also `QFE', and `Altitude'.
HG	Hang Glider
Homologation	The validation of a Flight Performance by an NAC or FAI for record purposes. Also the process of approving a particular model of glider for competition purposes.
Host	When used in conjunction with NAC this refers to the NAC in whose territory the event is run.
hPa	Hecto Pascal (Pressure unit, equal to a millibar)
IAS	Indicated Airspeed
ICAO	International Civil Aviation Organisation (HQ in Montreal, Canada)
International Standard Atmosphere (ISA)	The ISA to be used for FAI matters is given in ICAO Document 7488 tables 3 and 4. It assumes a temperature and pressure at sea level of 15°C and 760 mm of mercury (or 1013.25 mb/hPa), and a constant temperature lapse rate from sea level of 6.5°C per 1000 m (1.98°C/3.56°F per 1000 ft) rise in height, up to a height of 11,000 m (56.5°C) which is assumed to be the Tropopause, above which constant temperature is assumed. Pressure figures from this ISA are used in calibration of barographs, because although the real atmosphere varies from day to day, for calibration purposes a set of internationally agreed figures are needed so that all calibrations are to the same datum, whether or not such figures correspond to `true' height on a given day. A similar principle is used in calibrating pressure altimeters for aircraft, so that all aviation activities have a common standard of pressure height indication in the cockpit.
ISA	International Standard Atmosphere
MD	Meet Director, also known as the Event Director and referred to in GS Chapter 4 as such
min	Minute, unit of time (UT), compared to `arcmin' which is 1 minute of angle
m/s	Metres per Second
MSL	Mean Sea Level
NAC	National Airsport Control
O	(FAI Class) - Hang Gliders and Paragliders
O&R	Out and Return
OO	Official Observer
PA	Paragliding Accuracy
PG	Paraglider
QFE	Pressure Setting which indicates zero altitude when at airfield height
QNH	Pressure Setting which indicates height above sea level
SD	Safety Director
S7	Section 7 of the FAI Sporting Code i.e. this section. Also sub-sections 7A to 7D.
Shall	See under `Wording'
Should	See under `Wording'
Space	Above the earth's atmosphere, in earth orbit or above
Sprog	A strut, outboard of the wing, which supports an area of the sail on a flexwing hang glider. Sometimes referred to as a “wash out rod” or “anti dive stick or strut” in the past.

TAS	True Air Speed
TL	Team Leader
TP	Turn Point, also see WP, Waypoint
Tracklog	The record of a flight produced by a GPS
Tracklog point	The individual components of a tracklog
UT	UTC to the local hour convention
UTC	Universal Time Co-ordinated (ex-GMT)
Validation	An act of ratification or official approval. In FAI terms, the act of approving a Flight Performance (or an element of one such as reaching a Turn Point) for FAI purposes.
Verification	The process of checking and assembling evidence with a view to validating a Flight Performance
Vs	Stalling Speed
WAG	World Air Games
WP, Waypoint	A generic term for either a start, turn or finish point claimed as part of a flight performance.
WPRS	A CIVL designed and administered system of ranking pilots from FAI sanctioned competition results.
WGS 84	See under `Geodetic Datum'
Wording	The use of “shall” and “must” implies that the aspect concerned is mandatory; the use of “should” implies a non-mandatory recommendation; “may” indicates what is permitted and “will” indicates what is going to happen. Words of masculine gender should be taken as including the female gender unless the context indicates otherwise. *Italics are used for explanatory notes.*
WPRS	World Pilot Ranking Scheme. A CIVL designed and administered system of ranking pilots from FAI sanctioned competition results.