FAI Sporting Code

Fédération Aéronautique Internationale

Section 10 –

Microlights and Paramotors

Annex 9

MODEL Local Rules AND TASK CATALOGUE FOR AIR SPORTS RACE CHAMPIONSHIPS

To Take Effect on 01 January 2025

Section 10 and General Section combined make up the complete Sporting Code for Microlights and Paramotors

FEDERATION AERONAUTIQUE INTERNATIONALE
MSI - Avenue de Rhodanie 54 – CH-1007 Lausanne – Switzerland

Annex 9 to SECTION 10

MODEL Local Rules

FOR THE ….th
AIR SPORT RACE CHAMPIONSHIPS

Place ..... Country..... Date ..…….....

ORGANISED BY : .....

ON BEHALF OF THE FÉDÉRATION AÉRONAUTIQUE INTERNATIONALE

Organizer Address:

Tel:

FAX:

E-mail

Official Web Site

AUTHORITY

These Local Rules combine the General Section and Section 10 of the FAI Sporting Code with regulations and requirements specific to this championship. The FAI Sporting Code shall take precedence over the Local Rules wording if there is omission or ambiguity.

CLARIFICATION

All Microlight and Paramotor classes

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Annex 9. Applies to all classes

The following regulations and tasks are supplementary to S.10 and apply specifically to AIRSPORT RACE competitions.

1 COMPETITION DESCRIPTION

Air Sport Race is a combination of both landing and navigation tasks, with live tracking and real time display scoring, optimized for live television broadcast. Navigation will be within a defined corridor with variable or fix width. Out of the corridor penalisation zones can be established. Known timed gates or hidden timed gates can be arranged along the corridor.

2 EQUIPMENT AND SAFETY

2.1 A protective helmet is mandatory when an aircraft has an open cockpit. Ideally this will be an integral helmet (or helmet with a roll-bar).

2.2 The airworthiness of paramotor microlight used is the responsibility of the competitor and registration will be taken as a declaration by the Delegation and competitor that the paramotor equipment or microlight aircraft to be used is certified as being airworthy by competent authorities. The Organizer has no responsibility in this regard; the responsibility rests fully with the Delegation and competitor.

2.3 With the exception of any equipment which could be considered as dangerous by the competition director, any complementary equipment will be accepted.

2.4 No GNSS or inertial based navigation aids are allowed.

3 AIMS

3.1 To determine champions in Air Sport Race.

3.2 To promote safety and develop air sports training and competition.

3.3 To exchange ideas and strengthen friendly relations between participants of the FAI competition.

3.4 To allow participants to share and exchange experience, knowledge and information.

3.5 To explore new alternatives like e-sports.

4 AWARDS

Medals and Trophies will be awarded for the first three placing according to the Competition Rules. It shall be awarded landing and navigation competition as individual championships, in such a way that in a competition it shall run three Championships as follows: Air Sport Landing Championship, Air Sport Navigation Championship and Air Sport Race Championship (resulting in a combination of both two firsts).
Awards giving event or ceremony must be celebrated immediately after the last task is finished

5 GENERAL REGULATIONS

5.1 All paramotors and microlight aircraft in the competition have to satisfy the requirements of FAI sporting code section 10. All aircraft are allowed if they are under 600 kg FAI microlight definition.

5.2 The official competition time shall be the local time or UTC, as defined in the Local Rules.

5.3 Each crew shall fly the same aircraft throughout the competition.

5.4 Modifications to aircraft shall only be accepted when certified by the responsible national authority.

5.5 For each competition, local rules and a registration system, including official maps, must be generated and published at least 60 days before the competition takes place. However, specifications in 6.4.2 and 6.7.1 points must be given and noticed once the competition is publicly announced.

5.6 Each crew will be provided with maps, not necessarily aeronautical, with a scale between 1:25,000 and 1:150,000, to cover the entire race. The scale will be determined by the Local Rules for each competition.

5.7 A list with the starting order and times will be published before each stage in the noticeboard.

5.8 The use of electronic navigation aids and/or autopilot is not permitted, all unauthorised devices must be sealed or guarded by the organiser during the flight. Electronic magnetic compasses are allowed.

5.9 Aircraft, crews and their personal baggage shall be inspected.

5.10 The crew shall have, in a room or place provided for this purpose, the time determined by Local Rules to prepare the map and transfer to their aircraft, prepare it for flight and taxi to their position at the standby point on the runway.

5.11 Any task shall not last more than approximately 40 minutes from the departure to the arrival.

5.12 Aircraft or paramotor equipment must have an endurance of the double of a task duration.

5.13 The use of an aircraft or paramotor equipment by two different crew contestants, is allowed if defined in the Local Rules. This is only allowed in case it does not hinder the execution of the intended number of tasks.

5.14 An online public noticeboard will be arranged for any public communication from the organisation to the

competitors.

5.15 All crews must declare a specific speed to fly the navigation tasks before the competition starts.

6 COMPETITION TASKS AND RULES

6.1 BRIEFINGS

6.1.1 Before the beginning of the competition the CD will organise a general briefing handling particular conditions relating to flights in competition sites, conditions of flights, ways to take off and land as well as any information useful for the pilots or operational procedures.

6.1.2 Free flights during the competition are not allowed except by authorisation of the CD.

6.1.3 The signals of marshals, the authorisations of take-off and the procedures of landings will be reminded during the briefings.

6.1.4 Every pilot makes a commitment to follow and not disturb the briefings.

6.1.5 At least a briefing will take place every day.

6.2 LIMITATIONS OF FLIGHT

6.2.1 Any situation considered as dangerous to the public, the structures, another aircraft or the pilot himself are forbidden and will incur penalties or disqualification.

6.2.2 Flight over congregated persons is not allowed

6.2.3 Every pilot is responsible for paying attention to possible collisions and making efforts to avoid them.

6.2.4 Task will take place only in VMC. During the tasks, if the meteorological situation turns under IMC, the task could be cancelled. CD criteria will be imposed. Wind intensity limit must be given in the Local Rules depending on type of aircraft and their standard speed ranges. Organisation will create a coherent and safe criterion.

6.2.5 The quantity of fuel will be enough to double the intended flight task.

6.3 USE OF AUTOMATIC SCORING SYSTEMS

In both navigation and landing tasks, organisation is recommended to use whatever the technology is available in order to provide real time scoring:

6.3.1 In navigation tasks a scoring software should be used to be displayed in real time.

6.3.2 During landing tasks, although it is preferable to have an automatic landing detector system, in the case this is not available, the organisation must arrange all human and technical resources needed to guarantee scoring results displaying as soon as possible, not lasting more than 1 minute since the task is executed by any contestant.

6.3.3 All above scoring results will be displayed as provisional until it is turned to final results.

6.3.4 A period defined in the Local Rules will be given to review all contestant results. After the review is made, the CD will turn from provisional to final results.

6.4 NAVIGATION TASKS

Competitors given times are related to the speed declared by each crew. The navigation tasks should be designed with a duration not higher than 30 to 40 minutes from departure to arrival taking the slowest crew speed as reference.

A whole competition should be designed with tasks from easy to more complex in terms of difficulty. Easiest configuration is a standard corridor with fix width and only starting point and finish point. To increase difficulty, timed known gates and hidden timed gates can be implemented, as well as varying corridor width, all at organisation discretion. This includes adding prohibited or penalty zones areas to the task.

6.4.1 Starting list: it must be published in advance by the organiser in the online noticeboard. Starting list must include the order of flights of all crews, and the following items: duration of preparation of the flight, quarantine area entry time, taking off time,

6.4.2 Quarantine area: this area will be used for preparing the flight, but also for avoiding personal contact between crews and maintaining the contestants out of any external input. Within the quarantine area, crews must prepare the flight during a given time. A set of items (instructions envelope) will be given at a given time to each crew.

6.4.3 Envelope instructions: A set of documents with the following information and instructions will be included:

- a map with the corridor and penalty zones,
- lines over visual references of the starting point, known timed gates and finish point drawn,
- a set of photos of known gates (including starting and finish points) Google Earth images can be used if this is included in the local rules,
- flight instructions with all particular operational procedures,
- take off time,
- a time table relative to the given take off time (chronometer time) including: time of each crossing known

timed gate, time of starting/finish point and time of landing.

6.4.4 Taking Off: Every crew must take off at their given time and not after the grace period given time.

6.4.5 Starting, finish, and known timed gates, must be clearly placed over visual recognisable references on both map and ground. Photos must be provided with upside north oriented by default if no other instruction is made in the Local Rules. Description of the exact part of the photo where the gate line is bounded, must be detailed.

6.4.6 Landing can be scored if briefed

6.4.7 After the finish point and before starting point, crews may find penalisation zones defined that must be avoided.

6.4.8 For each navigation task it is recommended that not more than two timed known gates and two hidden timed gates will be placed. However this may be changed in the local rules.

6.5 LANDING TASKS

6.5.1 A landing deck must be marked in visually acceptable conditions according to the following scheme. Any deviation must be specified in the local rules by the organizer.:

Landing direction

↧

TARGET	↑ 2 meters ↓
A	↑ 5 meters ↓
B	↑ 5 meters ↓
C	↑ 5 meters ↓
D	↑ 5 meters ↓
E	↑ 5 meters ↓

6.5.2 Main gear tires must be painted with a T or X mark at both sides each.

6.5.3 Any bouncing is acceptable only within a strip. Bouncing or rebound from a strip to another will not be acceptable, taking the landing location where the tires start constantly rolling along the rest of the deck, rolling both tires over each separation strip line.

6.5.4 Landing tasks might be powered or power off (idle if defined so in local rules). The score balance between both tasks should be 50% each or specified by the local rules. If landing and navigation is performed in same task the penalty score can be set equal.

6.5.5 In order to optimise day time during a competition, it will be preferable to make a landing task just after a navigation task and crews are proceeding to make their final landing. It will be briefed if a second landing task is also scheduled.

6.5.6 During landing tasks it is allowed that crews have communication with team leaders or trainers. It is also allowed to check real time scoring in order to inform themselves about the ongoing results of their opponents, so they can decide the best strategy in subsequent landings.

6.6 JUDGING EQUIPMENT

6.6.1 Data Transmitters: this device must register the GNSS track with a resolution of at least one point per second, and send it in real time to a specific server that will be processed for scoring. This device will be used as the primary scoring source. In the case of use of smartphones as Data Transmitters, these must be conveniently protected or sealed to avoid any type of information exchange with crews. For live television optimization, other devices can be used to transmitting live position. This must then be described in the local rules.
6.6.2 Data Logger: Loggers may be used by crews as backup data. They can use all accepted loggers by any FAI commission.
6.6.3 Video content might be created and used to help landing tasks scoring.
6.6.4 Automatic landing detection systems might be used to help speed up scoring display. This system may integrate or exchange data from Data Transmitters in order to link results with specific crews
6.6.5 Live streaming video cameras might be installed in the cockpit.

6.7 SCORING AND PENALTIES ***

6.7.1 The recommended scoring weight between navigation and landing tasks can be 10-50%, however this ratio can be modified in the local rules depending on the task and competition.
6.7.2 Scoring results are provisional until they are declared as final results by the CD.
6.7.3 Navigation scores will be processed from the Data Transmitters track, unless it is found any technical reason to use an alternative track coming from the secondary logger (backup logger).
6.7.4 Tasks scoring is based on cumulative penalisation so, the less penalties given the best position is achieved. A task result (task standings) will be given in descent order of crews according to their penalisation results.
6.7.5 Navigation penalties:

PENALTIES - Navigation TASKS	POINTS	MISSED	MAXIMUM
Flight preparation - Leaving the quarantine after the designated time limit.	100		
Take-off 3 seconds before or 60 seconds after designated time (grace period)	200		
Crossing through SP, known or hidden timed gates or FP within +/- 2 second grace period (points/second difference).	0		
Crossing through hidden timed gates after or before +/- 2 second (points/second difference)	1	100	100
Crossing through FP, known timed gate after or before +/- 2 second (points/second difference)	2	200	200
Crossing through SP after or before +/- 2 second (points/second difference)	2	200	200
Flying outside the corridor or into a penalty zones, within the first 5 seconds (grace period)	0		
Flying outside the corridor or into a penalty zones, after the first 5 seconds (grace period) (points/second difference)	1		
Flying into a prohibited** zones, within the first 5 seconds (grace period)	0		
Flying into a prohibited zone, after the first 5 seconds (grace period) penalty per entrance	100		
Backtrack*	100		100
Failure to follow departure and arrival instructions at the airfield	200		
Flying out of the corridor within 5 seconds	0		
Flying out of the corridor after the first 5 seconds (points/second)	1		

*Backtrack is defined as flight at an angle greater than 90 degrees when a flight recorder shows a deviation of more than 5 seconds in sequence from the intended direction of flight within a defined width corridor.
** area that is regulated as part of the competition as an area that gives penalties points
*** If CD changes the scoring and penalties, it must be specified in local rules.

6.7.6 Landing penalties:

PENALTIES - Landing TASKS	POINTS
Landing on target strip	0

Commented [1]: This is a navigation task and I recommend that this is reflected in the scoring. This means that the landing should not be more than about 10-20% of the total. This is also about the focus for TV, i.e. time distribution of the TV broadcast related to the focus of scoring. ps. The landing is the one that has the most randomness. This can be weather etc. Therefore, both the landing task and the scoring of the landing should take this into account. The difference between the boxes should therefore be much smaller.

The aim of the landing competition should be to be to move the crew a few places, but not push them out of the list if there is a gust of wind.

Penalty boxes should also be mentioned here. One should be per second you are inside the box, same as to when you are outside the corridor. The other can be a fixed penalty for entry. 50 or 100 pr entry. The difficulty level of this is up to CD, but it must be in relation to the rest of the task.

Grace period you get on SP and FP I recommend should be +/-2 sec.

A-strip landing	10
B-strip landing	30
C-strip landing	50
D-strip landing	80
E-strip landing	120
Land before the target line or after strip E, or off the deck	200
Increasing engine power or breaking during rolling within the deck	75
Abnormal landing	500
Abort before landing	150
Abort after landing without having gone through the whole grid	100
Failure to listen to the prescribed frequency	90
Violating any other rule imposed in the Local Rules and Regulations.	TBD
Violating aviation safety rules or putting another aircrew in an unsafe situation	500

6.7.7 When more tasks are carried out in a competition, the overall results will be calculated from the sum of points obtained from both navigation and landing tasks. This is regulated in the local rules for the competition. As an example, these points will be calculated from the average of the sum of all tasks standing results, applying the points according to the following table:

Standing in a task	Points to apply
1st	25 points
2nd	20 points
3rd	16 points
4th	13 points
5th	11 points
6th	10 points
7th	9 points
8th	8 points
9th	7 points
10th	6 points
11th	5 points
12th	4 points
13th	3 points
14th	2 points
15th	1 points

This is an example of calculation of navigation and landing tasks, and overall results:

# Standings	Navigation				Landings							Total points (Overall result)
	Task 1	Task 2	Task 3	Partial Navigation result. Avg.	Task 4	Task 5	Task 6	Task 7	Task 8	Task 9	Partial Landing result. Avg.	
Crew 1	25	25	20	**23,33**	20	25	10	9	20	16	**16,67**	**40,00**
Crew 2	20	20	25	**21,67**	10	20	0	16	20	10	**12,67**	**34,33**

6.7.8 As tasks scoring as overall results, must both be permanently displayed in real time accessible to the public and spectators.

6.8 E-GAMING

6.8.1
1. Single pilot operation
2. Using MSFS2020
3. Landing on deck not precision scoring.
4. No instruments restrictions, but it is not allowed to use any auto pilot system.
5. All standard airplanes can be used, but it must be able to be operated between 50-80 knots
6. Local rules can define a specific aircraft type used by all competitors in a competition. This must be notified at least 5 months before the competition starts.
7. Flight order and map is allowed to use on electronically device, as e-bag or on paper.
8. Pilot is responsible for all technical equipment, computer etc. Anny technical error is pilots' responsibility, if it is not regulated by the local rules.
7. Live streaming

Commented [EG2]: I interpret this as this is a scoring system to be used when there are multiple tasks in a competition. So that the different tasks are equally weighed in the overall result. But when the competition consist only of one navigation- and one landing task, the score can be merged one to one to get a final result.

Commented [3]: Landing is possible, but more difficult to achieve as an e-game. The rest we can do the same as in reality, but we can run the course in shorter and more frequent departures, if possible at the same time.