



S10 Editor's report **Proposed Section 10 amendments 2019**

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19/11/2019

S10 Editor's report, November 2019

Notes:

- A few minor editorial changes / updates to S10 have been made during the year as delegates have pointed them out. These are of a grammatical or punctuation nature and do not affect the meaning or implication of the text. Where they have been made will be indicated within the 2020 publication of S.10
- 9 S10 amendment proposals were received this year, either through the CIMA WIKI or directly to S10 Editor by email.
- Proposals in this document have been reordered from those uploaded to the CIMA Wiki; they are presented here in order of their occurrence in S10.
- Competition Directors must use the model local regulations and model task catalogue unless changes are approved by CIMA. This ensures a satisfactory standard of task setting and avoids numerous problems. Any changes to the model LR and TC must be clearly indicated when presenting the documents to CIMA.
- The voting guide for Sub-Committee Chairmen has been included in this report to help the Microlight and Paramotor Sub-Committee Chairmen.
- Sub-Committee Chairmen; please fill out the enclosed voting sheet



Sub-committee voting guide

For sub-committee Chairs

1. Votes must follow FAI rules

Paramotor and Microlight sub-committees shall vote on S10 proposed amendments, according to a decision taken during the CIMA 2013 plenary. These votes therefore have to be conducted according to FAI statutes and by-laws.

2. Votes are limited to S10 amendments

Votes are limited to S10 proposed amendments according to the list provided by the S10 Editor. Any new items must receive 2/3 majority support before being discussed. Any issue affecting CIMA in general must be raised during a plenary session and be voted on accordingly.

3. Eligible votes only

Only those who are eligible to vote will have their votes counted. SC Chairmen must ensure that only valid votes are counted. These will include (for example):

- NAC Delegates
- NAC Alternate Delegates if the Delegate is not present
- NAC Voting Representatives if neither the Delegate nor the Alternate is present.
- Proxies, if they have been accepted by the FAI office.

The FAI representative can confirm who is eligible and will provide country panels which should be distributed to eligible voters.

4. Record all decisions

All votes (and any amendments or other relevant comments) must be recorded. The SC Chairmen should ask someone to act as a meeting secretary and take Minutes. Any votes not recorded in Minutes are not valid. These Minutes shall be published and distributed to CIMA Delegates before the start of the Plenary sessions.

The Minutes can be short - just a list of the votes. Any further amendments or clarifications should be included in the Minutes. The Minutes should be sent out via the CIMA email lists as soon as the meetings have finished.

Barney Townsend
November 2019

Proposal 1

Proposal from

Krisztián DOLHAI, (HUN)

Proposal title

Clarification of weight limitation for records.

Existing text

S.10 1.3 DEFINITION OF A MICROLIGHT OR PARAMOTOR AIRCRAFT

1.3.1 A one or two seat powered aircraft whose minimum speed at Maximum Take Off Weight (MTOW) is less than 65 km/h, and having a MTOW of:

- 400 kg for a landplane flown solo
- 500 kg for a landplane specifically designed to be flown with two persons but flown solo in championships.
- 450 kg for an amphibian or a pure seaplane flown solo;
- 550 kg for an amphibian or a pure seaplane specifically designed to be flown with two persons but flown solo in championships.
- 600 kg for a landplane flown with two persons
- 650 kg for an amphibian or a pure seaplane flown with two persons
- 600 kg for an autogyro flown with two persons
- 650 kg for an autogyro flown with two persons intended to be operated on water

Note. These definitions also apply to foot-launched Microlight and Paramotor aircraft.

New text

S.10 1.3 DEFINITION OF A MICROLIGHT OR PARAMOTOR AIRCRAFT **FOR CHAMPIONSHIPS AND RECORDS**

1.3.1 A one or two seat powered aircraft whose minimum speed at Maximum Take Off Weight (MTOW) is less than 65 km/h, and having a MTOW of:

- 400 kg for a landplane flown solo
- 500 kg for a landplane specifically designed to be flown with two persons but flown solo **in championships.**
- 450 kg for an amphibian or a pure seaplane flown solo;
- 550 kg for an amphibian or a pure seaplane specifically designed to be flown with two persons but flown solo **in championships.**
- 600 kg for a landplane flown with two persons
- 650 kg for an amphibian or a pure seaplane flown with two persons
- 600 kg for an autogyro flown with two persons

- 650 kg for an autogyro flown with two persons intended to be operated on water

Note. These definitions also apply to foot-launched Microlight and Paramotor aircraft.

Reason

The same limitation should apply for records as for championships, as per S.10 1.1 'scope of work'.

The categories for records in S10 general section 3.3 are divided by the number of persons on board and not the number of seats, so it should be possible to fly solo record with airplanes specially designed to be flown with two persons but flown solo, with the increased weight as on championships.

The intention of 1.3.1 is to define the weight limits for each class of aircraft for both records and championships, but as worded currently it is ambiguous: two of the statements specifically say 'for championships' when the others do not.

This proposal is simply for an editorial amendment that makes the meaning clearer of this section.

Proposal 2

Proposal from

Krisztián DOLHAI, (HUN)

Proposal title

Increasing minimum speed for microlight and paramotor aircraft

Existing text

S.10 1.3.1

A one or two seat powered aircraft whose minimum speed at Maximum Take Off Weight (MTOW) is less than 65 km/h, and having a MTOW of:

New text

S.10 1.3.1

A one or two seat powered aircraft whose minimum speed at Maximum Take Off Weight (MTOW) is less than **65 km/h 83 km/h**, and having a MTOW of:

Reason

The deck length was increased from 100 meters to 125 meters, and the weight limit increased for microlights in order to allow more type of microlights to participate, therefore also the minimum speed should be increased.

This proposal is to increase the minimum speed from 65 km/h to 83 km/h (45 knots) as the new EU regulation 2018/1139 Chapter1/Article2/8.a allows MTOM for microlights to 600 kg, and the minimum steady flight speed in landing configuration 45 knots.

Proposal 3

Proposal from

Krisztián DOLHAI, (HUN)

Proposal title

Clarification of the exception on backtracking

Existing text

S.10

4.24.5

During a navigation along a leg, competitors must not backtrack along the track line against the direction of the task under any circumstances. Backtracking is defined as flying with an angle of greater than 90 degrees in respect to the intended flight direction within a corridor defined by the width used to score gates in the task.

The only exception to this is within the radius of a specified turn point at which the track line itself turns through more than 90 degrees.

New text

S.10

4.24.5

During a navigation along a leg, competitors must not backtrack along the track line against the direction of the task under any circumstances. Backtracking is defined as flying with an angle of greater than 90 degrees in respect to the intended flight direction within a corridor defined by the width used to score gates in the task.

The only exception to this is within the **1000m** radius of a specified turn point at which the track line itself turns through more than 90 degrees.

Reason

The size of the radius is not defined, where the backtrack penalty should not be applied. A bad design of the task at the last EMC caused 8 backtrack events in the same area. Some competitor argued their protest with the missing size of the radius. 1000 meter is enough even if a procedural turn is allowed.

Proposal 4

Proposal from

Richard MEREDITH-HARDY (CIMA President of Honour)

Proposal title

Addition of some definitions

Existing text

S.10

5.6 START AND FINISH GATES

5.6.1 Start and finish lines are gates of maximum 1 km in width and of unlimited height. For championships any dimension or orientation shall be detailed in the local regulations or given at briefing.

5.6.2 Slalom start and finish gates shall be between 6m and 12m in width and a maximum of 2m in height. Details shall be included in the Local Regulations.

New text

5.6 STARTING AND FINISHING GATES

5.6.1 Take-off point. The precise point at which all parts of an aircraft or its crew cease to be in contact with the ground or water.

5.6.2 Start and finish lines lines are gates of maximum 1 km in width and of unlimited height, the base being specified on the surface of the earth and at right angles to the first leg of the course. For championships any dimension or orientation shall be detailed in the local regulations or given at briefing.

5.6.3 A start line is crossed when the first part of the aircraft cuts the line. Time measurement is taken from the GNSS fix immediately before it is crossed; distance measurement is from the centre point of the start line.

5.6.4 Start and Finish lines are gates of maximum 1 km in width and of unlimited height, the base being specified on the surface of the earth and at right angles to the last leg of the course. For championships any dimension or orientation shall be detailed in the local regulations or given at briefing.

5.6.5 A finish line is crossed when the first part of the aircraft cuts the line unassisted by any force external to the aircraft. Time measurement is taken from the GNSS fix immediately after it is crossed; distance measurement is from the centre point of the finish line.

5.6.6 Landing Point. The precise point at which any part of an aircraft or its crew first touches the ground or water.

5.6.7 Slalom start and finish gates shall be between 6m and 12m in width and a maximum of 2m in height. Details shall be included in the Local Regulations.

Reason

The sporting code for Microlights & Paramotors is a combination of the General Section and Section 10. When it came to precisely defining things like what exactly a Take off point is, something especially important for records, there was nothing in S10 because it was already clearly defined in Annex 1 to the General Section.

This annex has now been deleted from the General Section on the basis that it would be better for these things to be in the relevant section of the sporting code.

This is a proposal to restore them to the sporting code for Microlights & Paramotors by inserting them in S10. (Indeed this whole proposal could almost be considered an editorial issue).

For reference, below is the full text of the relevant definitions from the last edition of the GS to contain them.

A8.4 Start line. A gateway of a designated width and height, the base being specified on the surface of the earth and being approximately at right angles to the first leg of the course.

A8.4.1 Crossing a Start Line. A start line is crossed when the nose of the aircraft cuts the line. Time measurement is from the precise time of crossing, distance measurement is from the centre point of the start line.

A8.6 Take-off point. The precise point at which all parts of an aircraft or its crew cease to be in contact with or connected to the ground or water.

A12.4 Finish line. A gateway of a designated width and height, the base being specified on the surface of the earth and being approximately at right angles to the last leg of the course.

A.12.4.1 Crossing a Finish Line. A finish line is crossed when the nose of the aircraft cuts the line unassisted by any force external to the aircraft. Time measurement is from the precise time of crossing, distance measurement is from the centre point of the finish line.

A12.5 Landing Point. The precise point at which any part of an aircraft, its crew, or a parachutist's body or appendage EITHER ;

- a) first touches the ground or water; OR,
- b) comes to rest after landing.

Individual sports and activities should choose the alternative relevant to them.

Notes

Crossing a Start Line & finish line: S10 proposal differs from A8.4.1 in 'GNSS fix' so as to be compatible with S10 Annex 6, 6.3.1 (also makes application of rule much simpler; extrapolation to 'precise time of crossing' is a very bad idea).

'Approximately' Vague words like this are usually incompatible with definitive rules. It is perfectly straightforward to have a gate at right angles to a course leg, so the vagueness implied in GS is not copied over.

'Connected to' In a GS context this could apply to aircraft being winch launched? There seems to be no requirement for such provision in S10 and it could cause misunderstanding, so it is not copied over

Proposal 5

Proposal from

Wojtek DOMAŃSKI (POL)

Proposal title

Ordered Scoring for Paramotors

Existing text

S.10 Annex 3, part 3

3.4 SCORING

3.4.1 ALL TASKS

The maximum score may be up to 1000 points per task and is generally calculated as follows: $P = Q/Qmax \times 1000$

Where: Q = pilot scores, Q max = best score for the task, P = Total score
but, depending on the task, absolute scores for pilots' performance may also be awarded either in combination with the above or exclusively. Where a combination is used the total available absolute score shall not be more than 50% of the total available score.

e.g.: $P = Q/Qmax \times 750 + y$ (where the maximum value of y would be 250)

OR $P = y$ (where the maximum value of y could be 1000)

In all cases: P = Total score, Q = pilot score, Q max = best score for an element of the task, y = an absolute score

The winner of the class shall be the pilot gaining the highest total points in the class

The Paramotor team prize is computed from the sum of the scores of the top three pilots of each country in each task in each valid class which has minimum of 8 pilots.

The task score for which a pilot was disqualified shall not count for team scoring. Other valid tasks flown by this pilot are not affected (S10 4.34.12)

In the PF and PL classes, if less than 50% of pilots in class start a task then after all penalties have been applied each pilot score for the task will be reduced on a pro-rata basis according to the following formula:

Pilot final task score = $Ps * (\text{MIN}(1, (Ts/Tc)^2))$

Where

Ps = Pilot task score after all penalties Etc are applied.

Ts = Total started Total number of pilots in class who started the task (ie properly, beyond 5 minute rule).

Tc = Total class Total number of pilots in class.

New text

3.4 SCORING

3.4.1 ALL TASKS

The maximum score may be up to 1000 points per task and is generally calculated as follows: $P = Q/Qmax \times 1000$

Where: Q = pilot scores, Q max = best score for the task, P = Total score

but, depending on the task, absolute scores for pilots' performance may also be awarded either in combination with the above or exclusively. Where a combination is used the total available absolute score shall not be more than 50% of the total available score.

e.g.: $P = Q/Q_{\text{max}} \times 750 + y$ (where the maximum value of y would be 250)

OR $P = y$ (where the maximum value of y could be 1000)

In all cases: P = Total score, Q = pilot score, Q_{max} = best score for an element of the task, y = an absolute score

The winner of the class shall be the pilot gaining the highest total points in the class

The Paramotor team prize is computed from the sum of the scores of the top three pilots of each country in each task in each valid class which has minimum of 8 pilots.

The task score for which a pilot was disqualified shall not count for team scoring. Other valid tasks flown by this pilot are not affected (S10 4.34.12)

In the PF and PL classes, if less than 50% of pilots in class start a task then after all penalties have been applied each pilot score for the task will be reduced on a pro-rata basis according to the following formula:

Pilot final task score = $Ps^*(\text{MIN}(1, (Ts/Tc)^2))$

Where

Ps = Pilot task score after all penalties Etc are applied.

Ts = Total started Total number of pilots in class who started the task (ie properly, beyond 5 minute rule).

Tc = Total class Total number of pilots in class.

3.4.2 ORDERED SCORING

The organizer can decide to use and ordered scoring for the competition. In this case, the following rules apply:

3.4.2.1 After each task, task points (TP) mentioned in 3.4.1 are used to create an order of pilots/crews in that task,

3.4.2.2 Then pilots are awarded competition points (CP):

1st in the task receives 1 CP

2nd in the task receives 2 CP

3rd in the task receives 3 CP

etc.

3.4.2.3 Pilots having the same amount of TP, share an average of CP adequate to the order in that task they did achieve. E.g. if 2nd and 3rd pilots win the same amount of TP, they will both receive 2.5 CP ($(2 \text{ CP} + 3 \text{ CP}) / 2 = 2.5 \text{ CP}$)

3.4.2.4 Before the first task, a maximum CP (MCP) for each class is announced. MCP equals to the number of pilots/crews registered in that class.

3.4.2.5 Pilot/crew who does not fly in the task, or who is disqualified is awarded MCP+2 CP

3.4.2.6 For each pilot/crew less than 3 originating from one country in the class, an MCP+2 CP score is added to the team score.

3.4.2.7 For each pilot/crew missing from the Nation Score formula given in S10 3.4.11.b, an MCP+2 CP are added to the Nation Score.

3.4.2.8 The best pilot/team/nation is considered the one which at the end of the competition is awarded the smallest number of CP, second best with next smallest amount of CP, etc.

Reason

Order scoring has been successfully used during the last WPC'2018 in Thailand, as well as since the very beginning in Slalom Championships, and in several countries in national open classic competitions (e.g. France, UK, etc.)

Order scoring has several benefits:

- a. Is simple to carry on
- b. Is easy to understand for the audience and pilots
- c. Keeps competitors competitive until the very end of the competition
- d. Equalizes the chance to get an edge over other competitors for pilots who are experts in a particular group of tasks: for example, in navigation or precision tasks differences between first few pilots is most often given in 1-2 digit number of task points, and rarely approaches close to 200 points. On the other hand, in pure economy task (only), it is possible to reduce the score of majority competitors too, e.g. 20-30% of the maximum score. Thermal flying is a valuable skill and no doubt that better pilot should be scored higher than their competitors, although it is unfair that only pure economy task allows flattening the overall result of so many pilots. It is a kind of qui-pro-quo that possibility for such a significant advantage in a paramotor competition is given only to a paragliding expert. CIMA governs a paramotor sport discipline rules, so either all experts should be given a chance to flatten others scores, or none of the experts should have it.
- e. The trend of choosing higher aspect ratio wings for FAI competitions, which fly better in thermals but are easier collapsing, will be diminished to the benefit of overall safety.

Simulations of TP to CP recalculation performed upon results from a few recent competitions, prove that winner and few top pilots remain the same positions regardless of the scoring system used. The best is still the best - which shows the ordered scoring is fair. The differences appear randomly in distant places. However, as said before, the most significant benefit is that almost every pilot remains involved in the competition until the very last task.

Proposal 6

Proposal from

Michael KANIA (GER)

Proposal title

Removal of tasks from the microlight catalogue

Existing text

S.10, Annex 4

2.B1 SPLIT SQUARE

2.B2 LIMITED FUEL TURNPOINT HUNT

2.B3 DURATION

New text

S.10, Annex 4

2.B1 SPLIT SQUARE

2.B2 LIMITED FUEL TURNPOINT HUNT

2.B3 DURATION

Reason

The tasks affected are either economy or speed tasks or both, combined with some other challenges. Considering the upcoming new types of microlights with changed weight and performance together with the older ones in one class, such kind of tasks are no longer useful and fair. The result of such a competition task depends almost only from the performance of the aircraft, but not from the pilots skill.

Proposal 7

Proposal from

Michael KANIA (GER)

Proposal title

New Microlight Precision Task - Circle

Existing text

NONE

New text

S10 A4:

CIRCLE

Objectives

The objective is to fly a precise 360 degree circle around a marker in a given minimum height of 700ft AGL in a range of radius of minimum 200 meters to a maximum of 750 meters. The competitor may choose the radius within the given limits. To fly into the circle the competitor has to overfly the entry point (EP) as well as the center marker (CM) in a straight line initially.

After passing the center marker the competitor has to bank into the left using a desired radius. The first 180 degrees are for orientation purposes and not scored, even if the limits are exceeded. After 180 degrees, passing the given entry line (X) the scoring starts for the next 360 degrees. The scoring ends by crossing the entry line (X). The competitor has to leave the circle heading to the next waypoint (WP).

Summary

Competitors will be given:

- The position of the entry point (EP)
- The position of the center marker (CM)
- The next Waypoint (WP) after leaving the task
- The elevation of the CM above MSL

Safety

During the task the competitor has to ensure that his aircraft is operating within the limits of speed, bank and g-force defined for the aircraft. The competitor is responsible to fly within the legal regulation, especially with respect to the minimum altitude.

The organizer has to ensure that only one aircraft is flying within the task at one time, to avoid critical approaches. Therefore, the organizer can issue special instructions regarding height or heading for entering or leaving the task.

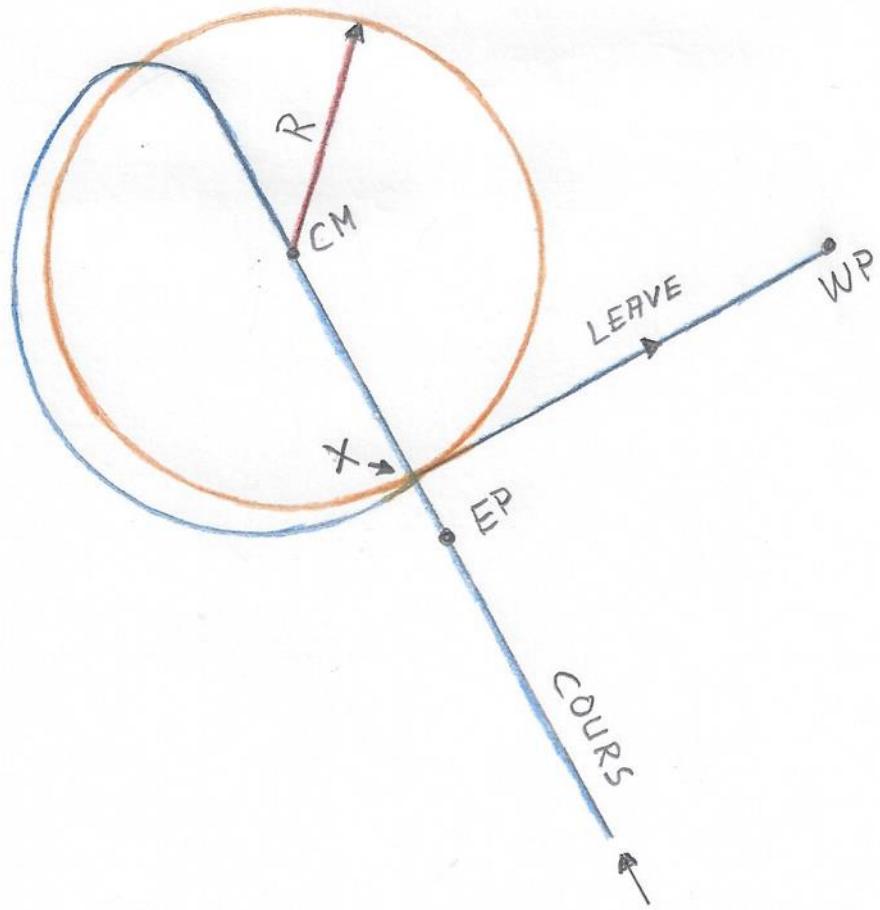
Scores

The maximum score is given if the circle is flown exact circular, within the given limits.

$$P = (R_{\min}/R_{\max} - 0,5) * 400$$

$$P_{\max} = 200$$

- The task will be scored with 0 points if** Ratio of R_{\min} to R_{\max} is 0,5 or smaller** The CM is located outside of the flown circle
- EP and CM are not flown over within the briefed limits
- The aircraft leaves the limits of the radius
- The aircraft leaves the given altitude limits



Reason

Please find attached a proposal for a new task for microlights. I have discussed this proposal with several pilots and we believe that it could be an interesting task. My experience is that pilots who have a perfect time- and space- coordination and good feeling for the aircraft can reach the perfect score. However, accurate judgement of the wind force is a crucial factor as well. I have flown this in trials myself (I can provide a track log for example) and I will have more feedback from other pilots who are testing this before I come to the Plenary. I will schedule the task also for the next German competition to get more experience, whatever the CIMA voting will be.

Proposal 8

Proposal from

Wojtek DOMAŃSKI (POL)

Proposal title

No Pure Economy for PL2 Class

Existing text

S.10 Annex 4

3.B1. PURE ECONOMY

Objective

Take-off with a measured quantity of fuel and stay airborne for as long as possible and return to the deck.

Special rules

- Free take-off within the time window.
- Departure from view of the marshals or egress from the permitted flight area will incur penalties.
- Land outside the airfield boundary: Score zero.
- Land inside the airfield boundary but outside the deck: 20% penalty.
- (for PL2 only): returning with less fuel than the specified residual amount: score zero

Scoring

$1000 \times T_p$ Pilot score = T_{max}

Where:

T_p = The pilot's time, T_{max} = The longest time taken to complete the task

New text

S.10 Annex 4

3.B1. PURE ECONOMY

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Special rules

- Free take-off within the time window.
- Departure from view of the marshals or egress from the permitted flight area will incur penalties.
- Land outside the airfield boundary: Score zero.
- Land inside the airfield boundary but outside the deck: 20% penalty.
- (for PL2 only): returning with less fuel than the specified residual amount: score zero
- **PL2 class shall be excluded from this task**

Scoring

$1000 \times T_p$ Pilot score = Tmax

Where:

T_p = The pilot's time, Tmax = The longest time taken to complete the task

Reason

Double trike with two pilots combines a heavy aircraft. Recovery collapse in PL2 class is more difficult to recover than in any other paramotor class, because the pilot and passenger, both tightened to the structure of trike, can not use their weight shift to counteract rotations, direction changes, etc. When wind gust catches the double trike close to the ground during launch or takeoff, pilot and navigator usually helplessly observe what happens with their aircraft.

Due to the nature of line suspension, a connection between canopy and trike is soft (flexible). If the wind gust rotates the trike so the wheels are not in line with landing direction, or the canopy is blown aside, the pilot has no chance to avoid an accident, his trike either rolls or hits the ground in a swing. We have observed upside-down falls of the trikes during launch in WPC'2018 in Thailand, as well as severe accidents during landing from pure economy tasks in Polish Championships.

For this reason, PL2 class shall be excluded from the Pure Economy task. Flying in the middle of the day in thermal conditions is not the natural environment for the PL2 double trikes.

Proposal 9

Proposal from

Barney TOWNSEND (GBR)

Proposal title

Revised version of S.10 A8 Model Local Regulations and task catalogue for Endurance Championships

Existing text

Existing text of Annex 8 to S.10 is as it was originally proposed in 2017 by Estonia.

[View the document through this link](#)

New text

I propose an amended version of the document, updated to reflect recent developments in the UK and to match the official S.10 annex format.

[The new document can be viewed through this link](#)

Reason

In 2017 the plenary approved the proposed new annex to S.10 for a local regulations and task catalogue for Endurance Championships to be classified as a Cat1 World Championship status.

Since then, no World Paramotor Endurance Championship has taken place, in part because there are still discrepancies in the wording of the rules, and areas in which the may be possible unfair advantage to competitors which would make it problematic at international Cat1 level.

In the UK, we see great potential in this format for the future, and we have adopted it as the primary format for our British National Paramotor Championships in 2018 and 2019. This has allowed us to refine the format, test the tasks involved, and smooth out any poorly defined aspects in relation to both pilot safety and fairness of the competition.

In essence, our new proposed format is the same as the original in that pilots have many available flying hours during any particular day, a very large area map to fly, and may choose their own route and task between turnpoint hunt or precision navigation routes, according to their judgement of the weather conditions. This still allows for a competition in which there are minimal amounts of briefings and in which pilots may plan a flight and navigation strategy for themselves over a period of days, not just for a particular task on any one day.

To summarise the most essential differences between the 2017 version and my proposed versions:

Use of GPS for Navigation

We propose that at international level, pilots should still be navigating using map only, and that use of GPS for navigation should be banned.

Pilot safety

We propose a new maximum limit of 4 hours airtime per pilot per day, to avoid the danger of bad decision making and accidents as a result of fatigue. Pilots may make as many flights as they choose during the much longer available flight window, with rest breaks in between flights

We continue to support the concept of additional points for landing out at other fields, but the available number of these land out points is limited to a few so that all points at which pilots may land can be monitored by marshals for safety.

Balance of navigation to speed

We propose to significantly increase the relative balance of points available for the 'precision' navigation tasks (which do not require a fast wing), relative to those available for the turnpoint hunt aspect of the competition (which does require a fast wing). This reduces the incentive for pilots to choose highly specialised equipment of small wings and big engines.

Balance of navigation to economy

We introduce the option for directors to set a fuel limitation on the turn point hunt aspect of the task on any particular day of the competition so that pilots must fly economically to gain more points, using economical equipment. This also reduces the incentive for pilots to choose highly specialised equipment of small wings and big engines.

Fairness to all competitors

We reorganise organise the competition to ensure that refuelling can only take place in designated and monitored areas, and not just anywhere a pilot lands (as was allowed in the 2017 version of the rules). This makes it much more fair for pilots who do not have large ground support teams that can follow them around the map and provide fuel for them wherever they choose to land. It also improves safety because any outlanding and refuelling only takes place in areas that are monitored by marshals and provided with adequate fire safety protection.

