



MALAYSIA SPORT AVIATION FEDERATION

# **TASK CATALOGUE**

*for the*

**2nd FAI ASIAN-OCEANIC PARAMOTOR  
CHAMPIONSHIPS**

*And*

**1<sup>ST</sup> KEMBARA INTERNATIONAL PARAMOTOR  
CHALLENGE**

*At*

**Kuala Terengganu, Terengganu, Malaysia**

*Organised by*

**Malaysia Sport Aviation Federation  
*on behalf of the***

**FÉDÉRATION AÉRONAUTIQUE  
INTERNATIONALE**

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**AUTHORITY**

This Task Catalogue is to be used in conjunction with the Local Regulations. The General Section and Section 10 of the FAI Sporting Code takes precedence over the Local Regulation and Task Catalogue wording if there is ambiguity.

**CLARIFICATION**

Classes PF1 and PL1 are “Paramotors”

Precision and Navigation tasks detailed in this catalogue shall be used both in the Asian-Oceanic Paramotor Championships (AOPC) and the 1<sup>st</sup> Kembara International Paramotor Challenge

Navigation tasks will only be used in AOPC.

The scoring of navigation tasks in this catalogue is the 'traditional' format but these are translated into ABG format in the AOPC individual and team general scores as described in the local regulations.

**CONTENTS**

AUTHORITY.....	1
CLARIFICATION.....	1
CONTENTS .....	1
P1 PRECISION TAKE-OFF .....	2
P2 SHORT TAKE-OFF OVER A FENCE .....	3
P3 PRECISION LANDING .....	4
P4 BOWLING LANDING.....	5
P5 CLOVER LEAF SLALOM .....	6
P6 JAPANESE SLALOM .....	7
P7 CHINESE SLALOM .....	8
P8 ROUND THE TRIANGLE.....	9
P9 THE EIGHT .....	10
P10 PARABALL .....	11
E1 PURE ECONOMY .....	12
E2 PURE ECONOMY & DISTANCE .....	13
E3 ECONOMY & DISTANCE.....	14
N1 PURE NAVIGATION .....	15
N2 NAVIGATION / ESTIMATED SPEED.....	16
N3 NAVIGATION / PHOTO IDENTIFICATION.....	17
N4 SPEED TRIANGLE & OUT AND RETURN.....	18
N5 NAVIGATION WITH UNKNOWN LEGS .....	19

<b>P1</b>	<b>PRECISION TAKE-OFF</b>
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Task type: Precision <sup>1</sup>

### **Objective**

To make a clean take off at the first attempt.

### **Description**

Pilots proceed to their designated takeoff deck and prepare to be ready to take off.

Pilots must NOT take off until they are sure an observer is ready to judge their takeoff performance. (eg a green flag is waved). Unobserved takeoffs will be penalized.

The pilot receives:

- 1st place for a clean take off at the first attempt.
- 2nd place for a clean take off at the second attempt.
- 3rd place for a clean take off at the third attempt.
- 4th place for a successful takeoff after four or more takeoff attempts.

### **Penalties**

5th place

- Unobserved takeoff.
- Out of takeoff order.
- Unreasonable takeoff delay.
- Running out of the takeoff deck.

### **Scoring**

Is described above.

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<sup>1</sup> This task is scored independently but is usually included before another flying task. To provide a decent level of competition it should only be deployed in nil or very light wind conditions.

**P2 SHORT TAKE-OFF OVER A FENCE**

Task type: Precision <sup>2</sup>

**Objective**

To take off and clear a fence from as short a distance as possible <sup>3</sup>

**Description**

A fence 2m high and 10m long is manoeuvred into a position of pilot choice.

When takeoff permission is granted, pilot takes off and tries to fly over the fence.

**Special rules**

If the pilot's feet (PF1) or wheels (PL1) have not left the ground and the line of the fence is not reached at the first attempt then one second attempt is permitted.

**Penalties**

Last place  
- Breaking the fence or weaving.

**Scoring**

Pilot score = Maximum distance from start to fence in cm <sup>4</sup>

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<sup>2</sup> This task is scored independently but is usually included before another flying task.

<sup>3</sup> A fence is simply 2 x 2m poles with a breakable plastic tape between.

To prevent unnecessary delay the fence should only be brought to the pilot when he is ready to take off.

The pilot should not be told the distance he is from the fence, the distance should be at the sole visual judgement of the pilot.

The observers should be equipped with 2 short sticks to mark the distance to be measured.

The job of holding the two poles supporting the fence can be quite hazardous; it should be entrusted to marshals experienced in Paramotor operations.

<sup>4</sup> The distance measured is the maximum distance the pilot is away from the fence whilst touching the ground, thus if the pilot moves away from the fence during launch then this distance shall be included.

<b>P3</b>	<b>PRECISION LANDING</b>
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Task type: Precision <sup>5</sup>

### Objective

To land as near as possible to a target.

### Description

The pilot enters the designated circuit pattern at min. 600 ft AGL which is in principle circular with the landing target at its centre.

A **green flag** is waved; pilot immediately flies to the centre of the circle. A **good start** is when the pilot is overhead the target with engine off within 30 seconds of the green flag being first waved.

After at least one minute in the air since turning off his engine, the pilot attempts to make a first touch as near as possible to the centre of a 2.5m radius target. <sup>6</sup>

The point from which the pilot's score will be derived is the first touch by the pilot's foot (PF1) or wheel (PL1).

The pilot must vacate the landing area to a safe distance as soon as possible after landing. If, after a good start, a landing attempt is bailed for some recognizable reason outside the pilot's control or there is a technical problem, then a **white flag** will be waved; the pilot may land in a safe place and will be permitted to re-start the landing task as soon as possible without penalty.

### Penalties

Last place

- Engine off for less than one minute before first touch.
- First touch outside the target.
- Falling over as a result of the landing.

### Scoring

Pilot score =  $(r - D_p)$

Where:

$r$  = radius of the target (in cm)

$D_p$  = Distance of pilot's first touch from the centre of the target. (in cm)

<sup>5</sup> This task is scored independently but is usually included at the end of another flying task.

<sup>6</sup> The target may be equipped with an electronic accuracy mat. Its size and resolution will be briefed.

<b>P4</b>	<b>BOWLING LANDING</b>
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Task type: Precision <sup>7</sup>

### Objective

Land without engine, hitting as many pins as possible.

### Description

5 pins are placed along a line into wind in the landing area at regular intervals between 1 and 2m.<sup>8</sup>

The pins are 30-50 cm high and should be reasonably soft and lightweight.

They can simply stand on the ground or be lightly set into the ground, or can be attached to a spring system like that of the kicking sticks. A pin is said to be hit when it is clearly seen by a marshal or electronic sensor to be hit, or when the pin falls down.

The pilot enters the designated circuit pattern at min. 600 ft AGL which is in principle circular with the landing pins at its centre.

A **green flag** is waved; pilot immediately flies to the centre of the circle. A **good start** is when the pilot is overhead the target with engine off within 30 seconds of the green flag being first waved.

They will fly a minimum of 60 seconds and will try to hit as many pins as possible before touching the ground.

The pilot scores 1st place for hitting all 5 pins, 4th for four, 3rd for 3 Etc.

### Penalties

- 6th place
- Engine off for less than one minute before first touch.
  - Striking no pins.
  - Falling over as a result of the landing.

### Scoring

Is described above



<sup>7</sup> This task is scored independently but is usually included at the end of another flying task.

<sup>8</sup> Normally 2m, but this may be reduced in windier conditions.

<b>P5</b>	<b>CLOVER LEAF SLALOM <sup>9</sup></b>
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Task type: Precision

### Objective

To strike a number of targets laid out in a given order in the shortest possible time.

### Description

4 inflatable pylons 12m in height are laid out at the corners of a 70.71m square.

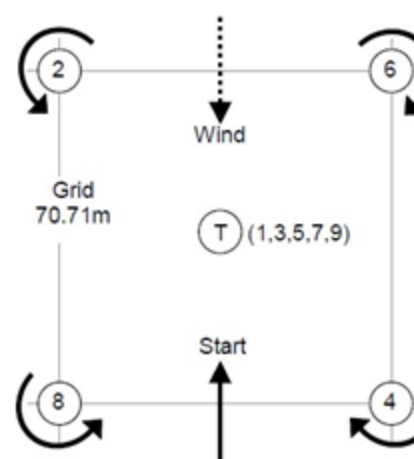
A fifth target is set at the centre of the square.

The pilot flies to the assigned circuit area and waits to start the task as briefed.

A **green flag** will be waved to indicate the pilot must start the task.

A **good start** is when the pilot kicks, or attempts to kick the first stick within his start slot.

The pilot enters the course from a direction of his choice and strikes the target T (strike 1). At this point the clock starts. The pilot flies around pylon 2 and returns to kick the stick T (strike 3), he then flies around pylon 4 and returns to kick the stick T (strike 5). This continues until all four pylons have been rounded. The clock stops when target T is kicked for the last time (strike 9).<sup>10</sup>



A valid strike on the target T is when the electronic 'kick stick' sensor detects it, or if automatic detection is not in use, where the pilot or any part of the Paramotor has been clearly observed to touch it.

To count as a strike, the pilot's body must be clearly seen to round pylons 2 & 8 in an ANTI CLOCKWISE direction and pylons 4 & 6 in a CLOCKWISE direction.

Pilots may have only one attempt at striking each target except for the first and last targets where three attempts at each are permitted.

A technical problem with the course will cause a **white flag** to be waved; the pilot must return to the circuit area and await the green flag for a re-start without penalty.

If the **red flag** is waved, the pilot must return immediately to the landing area.

### Penalties

10 seconds added to pilot time:

- Delay of more than 30 sec between green flag and first attempt to strike target T.
- Each missed strike.

Last place:

- Entering the course out of order.
- Failure to strike the first or last target.
- Failure to achieve at least two other strikes.
- Touch the ground at any point between strikes 1 & 9

### Scoring

Pilot task score = Pilot time + pilot time penalties. (shortest time is best).

<sup>9</sup> This task is eligible for FAI World records, If it is thought there might be a valid claim it is vital the claimant alerts the Jury so they can measure the course for validity before it is dismantled. For further guidance see the [Championship Record Claim Form](#)

<sup>10</sup> A good time in this task is less than 50 sec.

<b>P6</b>	<b>JAPANESE SLALOM</b> <sup>11</sup>
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Task type: Precision

### Objective

To strike a number of targets laid out in a given order in the shortest possible time.

### Description

4 targets (sticks) 1.8m in height are laid out on a 70,71m x 70,71m grid. The pilot flies to the assigned circuit area and waits to start the task as briefed.

A **green flag** will be waved to indicate the pilot must start the task.

A **good start** is when the pilot kicks, or attempts to kick the first target within his start slot.

The pilot enters the course into wind and strikes target 1. At this point the clock starts. The pilot then strikes targets 2 and 3. He then returns to fly clockwise around target 1 (strike 4), anticlockwise around target 2 (strike 5) and clockwise around target 3 (strike 6). He then returns to strike target 1 (strike 7), target 4 (strike 8) and target 3 (strike 9). The clock stops when target 3 (strike 9) is kicked <sup>12</sup>.

Strikes 1,2,3,7,8 and 9 are valid when the electronic 'kick stick' sensor detects it, or if automatic detection is not in use, where the pilot or any part of the Paramotor has been clearly observed to touch it.

Strikes 1 & 3 are valid when the pilot's body is clearly seen to round the target in a CLOCKWISE direction.

Strike 5 is valid when the pilot's body is clearly seen to round the target in an ANTI CLOCKWISE direction.

Pilots may have only one attempt at striking each target except for the first and last targets where three attempts at each are permitted.

A technical problem with the course will cause a **white flag** to be waved; the pilot must return to the circuit area and await the green flag for a re-start without penalty.

If the **red flag** is waved, the pilot must return immediately to the landing area.

### Penalties

10 seconds added to pilot time:

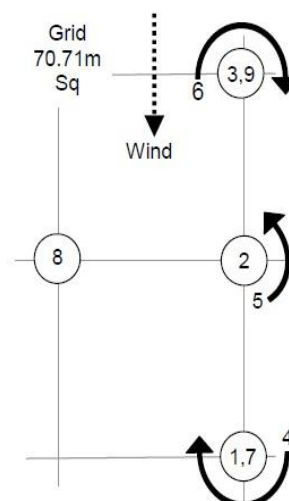
- Delay of more than 30 sec between green flag and first attempt to strike target 1.
- Each missed strike.

Last place:

- Entering the course out of order.
- Failure to strike the first or last target.
- Failure to achieve at least two other strikes.
- Touch the ground at any point between strikes 1 & 9

### Scoring

Pilot task score = Pilot time + pilot time penalties. (shortest time is best).



<sup>11</sup> This task is eligible for FAI World Records. If it is thought there might be a valid claim it is vital the claimant alerts the Jury so they can measure the course for validity before it is dismantled. For further guidance see the [Championship Record Claim Form](#)

<sup>12</sup> A good time in this task is less than 1 min 10 sec.



**P7****CHINESE SLALOM**

Task type: Precision

**Objective**

To strike a number of targets laid out in a given order in the shortest possible time.

**Description**

Between 6 and 12 targets are laid out on a course not exceeding 3Km in length<sup>13</sup>. Targets are sticks, intermediate targets may also be min. 8m inflatable pylons.

The pilot flies to the assigned circuit area and waits to start the task as briefed.

A **green flag** will be waved to indicate the pilot must start the task.

A **good start** is when the pilot kicks, or attempts to kick the first stick within his start slot.

The pilot enters the course and strikes target 1. At this point the clock starts. The pilot then flies the course to strike all the other targets in the given order, a strike on the last one stops the clock<sup>14</sup>.

Strikes are valid when the electronic 'kick stick' sensor detects it, or if automatic detection is not in use, where the pilot or any part of the Paramotor has been clearly observed to touch it, or if a target is an inflatable pylon, when the pilot crosses in the correct direction the line which defines when a pylon is passed.

Pilots may have only one attempt at striking each target except for the first and last targets where three attempts at each are permitted.

A technical problem with the course will cause a **white flag** to be waved; the pilot must return to the circuit area and await the green flag for a re-start without penalty.

If the **red flag** is waved, the pilot must return immediately to the landing area.

**Penalties**

10 seconds added to pilot time:

- Delay of more than 30 sec between green flag and first attempt to strike target 1.
- Each missed strike.

Last place:

- Entering the course out of order.
- Failure to strike the first or last target.
- Failure to score at least two other strikes.
- Touch the ground at any point between the first and last target.

**Scoring**

Pilot task score = Pilot time + pilot time penalties. (shortest time is best).

<sup>13</sup> This task is ideally suited for sites where there are physical features which obscure a direct view from one target to the next.

<sup>14</sup> No 'good time' can be stated for this task as the course length is variable.

<b>P8</b>	<b>ROUND THE TRIANGLE</b>
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Task type: Precision

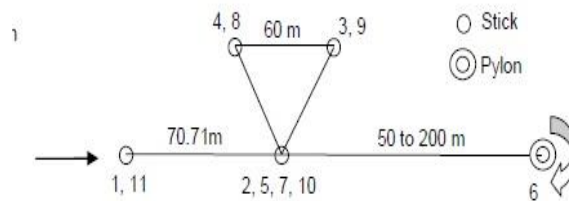
### Objective

To strike a number of targets laid out in a given order in the shortest possible time.

### Description

The course consists of 4 targets (1.8m sticks) and a 12m inflatable pylon.

The distance from stick 1 to 2 is 70.71 m, the side of the equilateral triangle is 60m, and the distance between stick 2 to pylon 6 is 50 to 200m.



The pilot flies to the assigned circuit area and waits to start the task as briefed.

A **green flag** will be waved to indicate the pilot must start the task.

A **good start** is when the pilot kicks, or attempts to kick the first stick within his start slot.

The pilot enters the course as indicated by the arrow and strikes the first target (strike 1). At this point the clock starts. The pilot flies kicking the sticks in the triangle (strikes 2, 3, 4 and 5), then clockwise around pylon 6 (strike 6), returns to kick the sticks in the triangle (strikes 7, 8, 9 and 10) and then back to the initial stick (strike 11). The clock stops on strike 11.<sup>15</sup>

Strikes on sticks are valid when the electronic 'kick stick' sensor detects it, or if automatic detection is not in use, where the pilot or any part of the Paramotor has been clearly observed to touch it.

Strike 6 is valid when the pilot's body is clearly seen to round the pylon in a CLOCKWISE direction.

Pilots may have only one attempt at striking each target except for the first and last targets where three attempts at each are permitted.

A technical problem with the course will cause a **white flag** to be waved; the pilot must return to the circuit area and await the green flag for a re-start without penalty.

If the **red flag** is waved, the pilot must return immediately to the landing area.

### Penalties

10 seconds added to pilot time:

- Delay of more than 30 sec between green flag and first attempt to strike target 1.
- Each missed strike.

Last place:

- Entering the course out of order.
- Failure to strike the first or last target.
- Failure to achieve at least two other strikes.
- Touch the ground at any point between the first and last target.

### Scoring

Pilot task score = Pilot time + pilot time penalties. (shortest time is best).

<sup>15</sup>With the pylon at 100m from stick 2, a good time in this task is less than 1 min 10 sec.

P9

## THE EIGHT

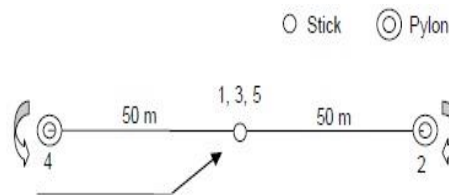
Task type: Precision

### Objective

To strike a number of targets laid out in a given order in the shortest possible time.

### Description

The course consists of one central target (1.8m stick) and two 12m inflatable pylons 50m away on both sides.



The pilot flies to the assigned circuit area and waits to start the task as briefed.

A **green flag** will be waved to indicate the pilot must start the task.

A **good start** is when the pilot kicks, or attempts to kick the first stick within his start slot.

The pilot enters the course as indicated by the arrow and kicks the stick (strike 1). At this point the clock starts. The pilot flies around the pylon ahead of him clockwise (strike 2), then kicks the stick (strike 3), then the other pylon counter clockwise (strike 4) and kicks the stick (strike 5). The course is repeated twice, the clock stops on strike 9.<sup>16</sup>

The course may be flown in a mirror image pattern consistent with the description above, thus the pilot has a choice of four different starting directions.

Strikes on sticks are valid when the electronic 'kick stick' sensor detects it, or if automatic detection is not in use, where the pilot or any part of the Paramotor has been clearly observed to touch it.

Strikes 2,4,6 & 8 are valid when the pilot's body is clearly seen to round the pylon in a direction consistent with the pattern.

Pilots may have only one attempt at striking each target except for the first and last targets where three attempts at each are permitted.

A technical problem with the course will cause a **white flag** to be waved; the pilot must return to the circuit area and await the green flag for a re-start without penalty.

If the **red flag** is waved, the pilot must return immediately to the landing area.

### Penalties

10 seconds added to pilot time:

- Delay of more than 30 sec between green flag and first attempt to strike target 1.
- Each missed strike.

Last place:

- Entering the course out of order.
- Failure to strike the first or last target.
- Failure to achieve at least two other strikes.
- Touch the ground at any point between the first and last target.

### Scoring

Pilot task score = Pilot time + pilot time penalties. (shortest time is best).

<sup>16</sup> A good time in this task is less than 55 seconds.

**P10****PARABALL**

Task type: Precision; PF1 only.

**Objective**

Deliver balls to a target in the shortest possible time.

**Description**

The target is a 'basket' 2m in diameter and 1m deep.<sup>17</sup>

A circle of 5m radius is marked on the ground around the target.

3 balls<sup>18</sup> are placed in a line 30-50m downwind from the target on marked start positions 3m apart from each other.

The pilot flies to the assigned circuit area and waits to start the task as briefed.

A **green flag** will be waved to indicate the pilot must start the task.

A **good start** is when the line the balls are on is crossed within 30 seconds of the green flag first being waved.

Timing starts when the line the balls are on is crossed (whether a ball is touched or not). The pilot approaches a ball, collects it with his feet and carries it to the target, or kicks the ball towards the target. This is repeated until all the balls are in the target or the time limit of 2 minutes is reached.

Timing ends when the last ball enters the target<sup>19</sup> or when the maximum time limit is reached.

Balls must stay in the target. Balls that bounce out will be scored according to the distance from the target.

There are no limitations to the number, angle, speed or height of approaches to the balls, the number of times a ball may be touched, or the technique for hitting or carrying the balls. The pilot may touch and move on the ground, but the wing must not touch the ground during the task.

If a pilot is carrying a ball in the air when the time limit is reached, he is allowed extra time<sup>20</sup> to complete delivery of the ball to the target. This extra time finishes when the ball next touches the ground or after 30 seconds, whichever comes first.

A **red flag** is waved when the task has ended. Results are then measured at this state.

**Penalties**

5 seconds added to pilot time:

- For each ball which finishes inside the 5m zone but not in the basket.

10 seconds added to pilot time:

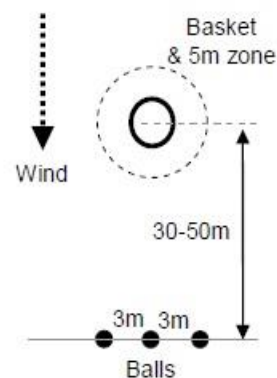
- Delay of more than 30 sec between green flag and first attempt to touch a ball.
- For each ball which finishes outside the 5m zone.

Last place:

- Entering the course out of order.
- Failure to touch at least two balls.
- Wing touches the ground during the task.

**Scoring**

Pilot task score = Pilot time + pilot time penalties. (shortest time is best).



<sup>17</sup> Construction should be light for safety reasons but strong enough to hold the force of a flying ball and to keep balls inside.

<sup>18</sup> Footballs are OK, but larger balls of 55 Cm dia. are better, eg 'gym balls'. In all cases they should be rather softly inflated so the pilot can get a good purchase on the ball and it doesn't bounce too well when dropped.

<sup>19</sup> With the basket at 30m, a good time in this task is less than 60 sec.

<sup>20</sup> If 2 minutes is reached and all balls are on the ground, no extra time, red flag is waved.

- If 2 minutes is reached and a ball is being carried by pilot in the air, red flag operator waits until either ball touches ground, or extra time is finished. If the ball is still not on the ground, pilot scores as if the ball is outside the 5m zone.

Extra time is NOT included in the measured elapsed time, which is always max. 2 minutes. Thus, if a pilot manages to drop a 3rd ball into the basket during extra time he will score 2 minutes.

**E1****PURE ECONOMY** <sup>21</sup>

Task type: Economy

**Objective**

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

**Description**

All pilots will carry no more than 2 litres of fuel - fuelling arrangements will be briefed.

Free take-off within the time window. <sup>22</sup> Pilots must NOT take off until they are sure an observer is ready to record their takeoff time. (eg a green flag is waved). Unobserved takeoffs will attract a penalty.

Timing ends the moment of first touch in the landing deck.

**Penalties**

Last place:

- Unobserved takeoff
- Departure from view of the marshals or egress from the permitted flight area.
- Land outside the deck.

**Scoring**

Pilot task score = Pilot time + pilot time penalties. (longest time is best).

<sup>21</sup> If max 1.5 kg of fuel is specified, this task is eligible for FAI World Records. For further guidance see the [Championship Record Claim Form](#)

<sup>22</sup> If the '5 minute rule' is invoked; LR 12.6.5, the pilot may not refuel and the clock restarts at zero at repeat takeoff.

**E2 PURE ECONOMY & DISTANCE** <sup>23</sup>

Task type: Economy (AOPC only)

**Objective**

Take-off with a measured quantity of fuel and stay airborne for as long as possible and/or fly the greatest possible distance.

**Description**

Teams proceed to the fuel control area to do the fuel control procedure.

Free take-off within the time window. Pilots must NOT take off until they are sure an observer is ready to record their takeoff time. (eg a green flag is waved). Unobserved takeoffs will attract a penalty.

Pilot flies through the IP gate to start the clock.<sup>24</sup>

The permitted flight area will be briefed.

Pilot flies the greatest possible distance and/or the greatest possible endurance.

The clock stops when the pilot first lands. The distance measured is a straight line from IP to the point of first pilot landing.

It is not compulsory to land away from the airfield <sup>25</sup>, but all pilots landing back at the airfield must return through the FP gate and land in the designated landing deck.

Upon return to the airfield, all pilots must proceed immediately to the flight recorder checks.

**Penalties**

Last place:

- Unobserved takeoff
- No IP gate time

**Scoring**

Pilot task score =  $(Pd / 100) + Pt$

Where

Pd is Pilot distance achieved (in Km)

Pt is Pilot endurance achieved (in sec)

<sup>23</sup> If max 1.5 kg of fuel is specified, this task is eligible for two different FAI World Records, endurance and distance. For further guidance see the [Championship Record Claim Form](#)

<sup>24</sup> If the pilot flies repeatedly through this gate, the LAST time is the time taken.

<sup>25</sup> Recovery is the responsibility of the pilot or team. Return by air is permitted but fuel and oil to achieve this may NOT be carried in the aircraft at original takeoff.

<b>E3</b>	<b>ECONOMY &amp; DISTANCE</b>
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Task type: Economy

### Objective

To take off from the deck with a given quantity of fuel <sup>26</sup>, fly as many sections as possible around a course of one or more sections and land in a landing deck.

### Description

Each section must be approximately 1Km in length and must contain a landing deck.

Lines of no return are arranged to prevent aircraft flying in the reverse direction to the general flow of traffic.

All pilots will carry no more than 2 litres of fuel - fuelling arrangements will be briefed.

The pilot waits to start the task in the takeoff area as briefed.

A **green flag** will be waved to indicate the pilot must start the task.

Pilot enters the course and tries to fly as many sections as possible before landing in one of the landing areas.

Pilots must not exceed 200ft height at any time.

Pilots should overtake on the outside of the course, they may overtake on the inside but will not score that section if the manoeuvre is considered to be overly aggressive.

### Penalties

No section score

- Overly aggressive overtaking.
- Flying too high.
- Failing to pass a pylon.

5 sections

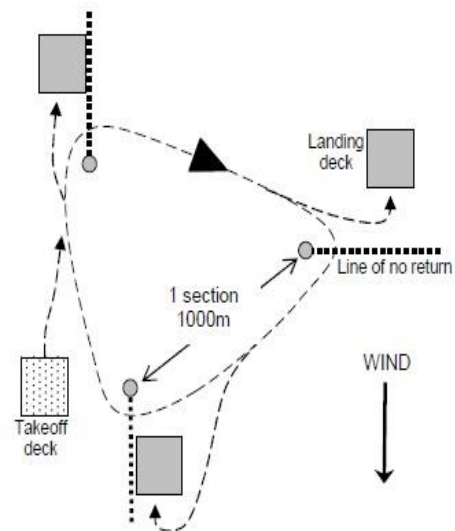
- Failure to land in a landing deck.

Last place:

- Pilot or any part of his Paramotor touches the ground during the task and takes off again.

### Scoring

Pilot task score = Pilot number of sections completed - pilot penalties. (most sections is best).



<sup>26</sup> If the '5 minute rule' is invoked; LR 12.6.1, the pilot may not refuel and the section count restarts at zero at repeat takeoff.

**N1 PURE NAVIGATION**

Task type: Navigation

**Objective**

To fly a course between as many turn points or markers as possible within the time window and return to the deck.

**Penalties**

Zero task score

- Failure to cross the IP or FP gates in the correct direction.
- Takeoff, or return through the FP gate outside the task window.
- Land out.
- Flight in a no-fly zone.

**Scoring**

$$\text{Pilot score} = 1000 \times \frac{\text{NBp}}{\text{NBmax}}$$

Where, according to briefing;

Either:

NBp = The number of ground markers and/or turn points a pilot collects in the task

NBmax = The maximum number of markers and/or turn points collected in the task

OR

NBp = the distance flown by the pilot in the task.

NBMax = the maximum distance flown in the task.



<b>N2</b>	<b>NAVIGATION / ESTIMATED SPEED</b>
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Task type: Navigation

### Objective

To fly a course between any combination of turn points and gates as defined at the briefing having declared estimated flight times or estimated times of arrival as required at the briefing, and return to the deck.

### Special rules

- The value of T, in seconds, will be given at the briefing.

### Penalties

Zero task score

- Failure to cross the IP or FP gates in the correct direction.
- Takeoff, or return through the FP gate outside the task window.
- Land out.
- Flight in a no-fly zone.

### Scoring

$$\text{Pilot score} = \left( 700 \times \frac{\text{NBp}}{\text{NBMax}} \right) + (300 - T)$$

Where, according to briefing;

Either:

NBp = The number of ground markers and/or turn points a pilot collects in the task

NBmax = The maximum number of markers and/or turn points collected in the task

OR

NBp = the distance flown by the pilot in the task.

NBMax = the maximum distance flown in the task.

AND

T = The total difference in between pilot's estimated and actual times for all timed sectors. (>=300 = 300)

**N3 NAVIGATION / PHOTO IDENTIFICATION**

Task type: Navigation

**Objective**

To locate an unknown number of photos along a route and return.

**Overview**

A course to be flown will be provided in advance.

Sheets containing 8 – 16 aerial photos of distinctive features along the course are provided to pilots immediately before takeoff.

Pilots fly the given course and identify the locations of as many of the photos which are within 200m of the course as possible. Some photos may be more than 200m from the course, these are to be ignored.

Pilots are considered to be in quarantine from the moment they receive their photo sheets until their map check is completed.

**Description**

When pilots enter the quarantine zone next to the deck prior to departure they will be given the photo sheet(s)

While in possession of a photo sheet Pilots will NOT communicate with other pilots or team members without the express permission of a marshal.

Free take-off within the time window.

Pilot flies to the IP gate to start the course.

The exact location of any photo found to be within 200m of the course is to be recorded by the pilot.

The pilot may fly directly to the FP gate and thence to the landing deck from any point along the course.

Upon landing, pilots prepare their map and then proceed immediately to the map check.

The map check is a simple matter of overlaying the pilot's map with a transparent master.

- Every photo location recorded by the pilot within 4mm (200m) of the correct location on the master overlay will be scored +1.
- Every point recorded by the pilot further than 4mm (200m) from the correct location on the master overlay, or any photo which was more than 200m of the course, will be scored -1.

Before the map check, communication with other pilots or team members is not permitted without the express permission of a marshal.

**Penalties**

- Zero task score
- Failure to cross the IP or FP gates in the correct direction.
- Takeoff, or return through the FP gate outside the task window.
- Land out.
- Flight in a no-fly zone.
- Unauthorized communication whilst in quarantine.

**Scoring**

Pilot score = pilot's map check score. (if < 0, then 0)

## N4 SPEED TRIANGLE & OUT AND RETURN

Task type: Navigation

### Objective

With limited fuel, to fly around a circuit in the shortest possible time, return to the deck, and then, with the pilots remaining fuel, fly in a given direction as far as possible and return to the deck.

### Description

Teams proceed to the fuel control area to do the fuel control procedure.

Free take-off within the takeoff window.

Pilot flies through the IP1 gate to start the clock for part 1, the speed triangle.  
- If the pilot flies repeatedly through this gate, the LAST time is the time taken.

Pilot flies around the triangle, passing through the scoring zones of the two turn points on the way, and flies through the FP1 gate.

Pilot performs the '4 sticks' task

Pilot flies through the IP2 gate to stop the clock for part one and to start part 2, the out and return.

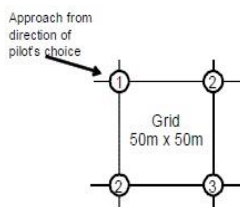
Pilot flies to a point of his own choice anywhere within the bounds of the official map and returns to the landing deck.

The distance measured is the total straight line distance from FP2 to the point of maximum distance and back to FP2.

Upon landing, all pilots must proceed immediately to the fuel tank and flight recorder checks.

### The four sticks

4 standard slalom poles are set at the corners of a 50m x 50m square. The pilot must kick 3 of the 4 poles. The first pole the pilot kicks may be any of the 4 poles. The third pole the pilot kicks must be diagonally opposite the first, the second pole may be either of the two other poles.



The pilot may have as many attempts as necessary at striking the first pole, Only ONE attempt is allowed at kicking both the second and third poles.

There will be two groups of poles. If, in the opinion of the marshals on duty a conflict with another aircraft exists in the same group, and the other group is also occupied, then a red flag will be waved and both pilots should kick only one pole and then depart on the rest of the overall task. Both pilots will then be given the opportunity to have ONE further attempt at this task as soon as possible after the end of the overall task.

### Penalties

Zero part 1 score

- Missing one turnpoint in part 1.
- Failing to pass through the IP1 or FP1 gates in the correct direction.

Zero part 2 score

- Failing to pass through the IP2 or FP2 gates in the correct direction.
- Land out before completing part 2.

Zero task score

- Land out before completing part 1.
- Missing both turnpoints in part 1.
- Takeoff, or return through the FP2 gate outside the task window.
- Flight in a no-fly zone

### Scoring

$$\text{Pilot score} = \left(475 \times \frac{\text{tMin}}{\text{tp}}\right) + Nq + \left(475 \times \frac{\text{dp}}{\text{dMax}}\right)$$

Where:

tp = the pilot's time, tMin = The best time (Part 1)

dp = the pilot's distance, dMax = the greatest distance (Part 2)

Nq = 10 points for kicking one stick, 25 points for two or 50 points for three

N5

**NAVIGATION WITH UNKNOWN LEGS**

Task type: Navigation

**Objective**

Follow a series of headings or known lines, identifying ground features from photographs and locating their positions on a map, and crossing hidden gates.

**Description**

Aircraft are placed on the edge of the takeoff deck and pilots declare to a marshal they are ready to receive the final task information which is a photo sheet of ground features and an emergency envelope containing the location of one of them.

While in possession of a photo sheet Pilots will NOT communicate with other pilots or team members without the express permission of a marshal.

When ready, pilots enter the deck and take off. Free take-off within the time window.

Pilot flies the course, changing direction when the turnpoints are found and passing through hidden gates along the course. <sup>27</sup>

During the task pilots must not back track along the track line against the direction of the task. If there is a need to backtrack they must leave the track line and fly back well clear of it before rejoining the track line at an earlier point.

From FP pilots fly the landing deck.

Upon landing, all pilots must proceed immediately to the flight recorder and emergency envelope checks.

**Penalties**

20% task score

- Opening the emergency envelope, or failure to return it still sealed.

Zero task score

- Failure to fly through the IP or FP gates in the correct direction.
- Takeoff, or return through the FP gate outside the task window.
- Land out.
- Flight in a no-fly zone.

**Scoring**

Pilot score = the sum of the turnpoints and hidden gates correctly passed by the pilot.

<sup>27</sup> Example

The following information will be given in advance of the briefing:

Locations of IP, TP1, X1, X2, Etc. and FP.

The following information will be given immediately before takeoff:

- An aerial photo sheet showing turnpoints TP2, TP3 EtcS
- Emergency envelope.

Pilot flies the course thus:

Pilot takes off and flies Leg 1 from IP1 to TP1

- Pilot flies Leg 2 from TP1 in the direction of X1. Somewhere along that leg he will identify turnpoint TP2 from the photo.

- Pilot flies Leg 3 from TP2 in the direction of X2. Somewhere along that leg he will identify turnpoint TP3 from the photo.

- Etc as briefed, normally about 6 legs, until eventually arriving back at FP1

In the event a pilot gets completely lost, he may open the emergency envelope which will reveal the location of a turnpoint about half way round the course.