



TASK CATALOGUE

FOR THE 8th

WORLD PARAMOTOR CHAMPIONSHIPS

Matkópuszta airfield
Hungary
6 – 16 August 2014

ORGANISED BY :

ON BEHALF OF THE FÉDÉRATION AÉRONAUTIQUE INTERNATIONALE

Organizer Address:

Tel:

FAX:

E-mail

Official Web Site

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 AL1, AL2, WL1 and WL2 are "Microlights" and classes PF1, PF2, PL1 and PL2 are "Paramotors"



FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



Task Catalogue

TASK CATALOGUE for PARAMOTOR CHAMPIONSHIPS

CONTENTS

1.	Introduction	4
1.1	PRINCIPLES	4
1.2	TASK TYPES	4
1.3	EXAMPLE TASKS	4
2	Navigation Tasks.....	5
2.1	PURE NAVIGATION (3.A1)	5
2.2	NAVIGATION, PRECISION & SPEED (3.A2)	5
2.3	NAVIGATION / ESTIMATED SPEED (3.A3)	6
2.4	NAVIGATION / ESTIMATED SPEED / PRECISION (3.A4)	6
2.5	NAVIGATION OVER A KNOWN CIRCUIT (3.A5).....	7
2.6	NAVIGATION WITH UNKNOWN LEGS (3.A6).....	9
2.7	CURVE NAVIGATION.....	11
3	Economy Tasks	14
3.1	PURE ECONOMY (3.B1).....	14
3.2	ECONOMY & DISTANCE (3.B2)	14
3.3	ECONOMY & NAVIGATION (3.B3)	15
3.4	ECONOMY & PRECISION (3.B4)	15
3.5	SPEED TRIANGLE AND OUT AND RETURN (3.B5)	16
3.6	PURE ECONOMY (unlimited fuel version of task 3.B1)	16
3.7	ECONOMY & DISTANCE (unlimited fuel version of task 3.B2)	17
3.8	ECONOMY & NAVIGATION (unlimited fuel version of task 3.B3)	17
3.9	SPEED TRIANGLE AND OUT AND RETURN (unlimited fuel version of task 3.B5)	18
4	Precision Tasks	20
4.1	PRECISION TAKE-OFF AND LANDING (3.C1)	20
4.2	THE FOUR STICKS (3.C2)	21
4.3	PRECISION TAKE-OFF AND LANDING (3.C3)	21
4.4	SHORT TAKE-OFF OVER A FENCE (3.C4)	22
4.5	SHORTEST TAKE-OFF (3.C5)	23
4.6	PRECISION CIRCUIT IN THE SHORTEST TIME ('Clover leaf slalom') (3.C6)	23
4.7	PRECISION CIRCUIT IN THE SHORTEST TIME ('Japanese slalom') (3.C7).....	24
4.8	PRECISION CIRCUIT IN THE SHORTEST TIME ('Chinese slalom') (3.C8).....	25
4.9	FAST / SLOW SPEED (3.C9)	26
4.10	ROUND THE TRIANGLE (3.C10)	27
4.11	THE EIGHT (3.C11)	28
4.12	BOWLING LANDING (3.C12)	28
4.13	PRECISION PARABALL (3.C13)	29
4.14	THE PYLON SQUARE	30

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



Key to symbols used in the task catalogue

	Line drawn before takeoff
	Line drawn after takeoff
	Free flight
	Direction of travel
	Marker selected from list of Marker Symbols
	Ground feature to be identified from photograph
	Turnpoint
	Turnpoint to be identified from photograph
	Ground feature to be photographed or controlled by FR evidence.
	Timing point or gate
SP	Initial or Start point
SP	Initial or Start point with time gate

FP	Finish point
FP	Finish point with time gate
Δ Π	Marker identity given before takeoff
	Home airfield
	Outlanding airstrip
	Direction of landing
	Left hand circuit
	Right hand circuit
	Circuit height above ground in feet
	Windsock
	Landing direction indicator
	Road or track

Marker Symbols

H
I
K
L
N
T
U
X
O
=
Π
Δ

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



1. Introduction

This catalogue describes tasks which may be set in during the 8th FAI World Paramotor Championships 2014. It includes several new tasks that have been tried out satisfactorily in national competitions and shall remain in this catalogue subject to approval of the Local Regulations and Task Catalogue by the FAI Microlight and Paramotor Commission (CIMA). Any tasks not approved may be deleted prior to approval of the document, rather than the entire catalogue failing to be approved.

1.1 PRINCIPLES

Good tasks make for good championships, but tasks also drive the design direction for the aircraft. For example, Microlights would soon lose their short field capability if no more precision landing tasks into a 100m deck were given.

Flight planning and navigation tasks develop good pilot skills but they, too, affect the characteristics of competition aircraft so a Director must try to set a reasonable balance between tasks where ultimately speed is the advantage and economy is the advantage. These tasks should be as long as possible, so that pilot skills are tested by having to fly over new and different country.

Competition Directors are cautioned against setting a few complicated tasks in favour of lots of simple ones. It is all too easy for a Championship to end with the minimum of tasks required (S10 4.3.3) and there is nothing more likely to upset pilots than if they think they have not flown enough in a championship to properly demonstrate their skills.

1.2 TASK TYPES

1.2.1 GENERAL

Tasks fall into Three Categories:

- A Flight planning, navigation estimated time and speed. No fuel limitation.
- B Fuel economy, speed range, duration. Fuel limited to maximum 15 kg for aircraft flown solo and 22 kg for aircraft flown with two people.
- C Precision

The proportion of each task to be used is stated in S10, 4.29.3

Any task may be set more than once, either identically or with variations.

Distances should be as long as possible referring to the recommended still air range of the competing aircraft stated in S10 4.17.7.

In any task requiring pre-declaration of speed or elapsed time the Director may set up hidden gates through which the pilot would fly if on the correct flight path. Pilots failing to be checked through such gates or who are observed flying a devious path to adjust timing/speed errors may be penalised. No information will be given at briefing on the existence or whereabouts of hidden gates, or the method by which they are controlled.

The Director may set a time period for completion of a task in addition to the last landing time.

Where 2m Pylons are defined in tasks, at the discretion of the Competition Director these may be replaced by ~~12m (+/-1m)~~ inflatable pylons of 8-12m in height. Shorter pylons have proved to be more resilient to gusts, so are preferable to the larger pylons in many cases.

1.3 EXAMPLE TASKS

~~The following tasks are examples of the tasks described above. Their purpose is to show the way in which real tasks have been designed using the generic principles outlined earlier. However, this is not an exhaustive set of tasks and others may be designed using these principles. Certain aspects of the scoring have been included in the task descriptions, in particular a schedule of penalties. However, the specific scoring for markers, turnpoints etc to be used in the competition will be briefed prior to the task being flown.~~

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



2 Navigation Tasks

2.1 PURE NAVIGATION (3.A1)

Objective

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

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.

2.2 NAVIGATION, PRECISION & SPEED (3.A2)

Objective

To make a clean take-off from the deck, to fly a course between as many turn points or markers as possible within a given time, and to collect bonus points for landing at designated markers before returning to the deck.

Special rules

- The clock starts the moment the marshal makes the signal to take off.
- At the start, the pilot scores 300 bonus points for a clean take off at the first attempt, 200 for the second, 100 for the third, zero for any attempts thereafter.
- In the case of landing markers, If the pilot elects to switch off his engine at least 5m above the marker and:

Makes a first touch on the marker: Landing bonus: 200 points

Misses the marker: landing bonus: 50 points

- If the pilot elects to not switch off his engine and:

Makes a first touch on the marker: Landing bonus: 100 points

- If the pilot falls over as a result of a landing: zero landing bonuses for that landing.
- If the pilot obstructs another competitor attempting to land at a landing marker penalties will apply.
- The clock stops the moment the pilot either crosses a line or lands back on the deck.
- Any outside assistance: Score zero.

Scoring

$$\text{Pilot score} = \left(500 \times \frac{\text{NBp}}{\text{NBMax}} \right) + \text{Bto} + \left(200 \times \frac{\text{Bld}}{\text{BldMax}} \right)$$

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.

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



NBMax = the maximum distance flown in the task.

AND

Bto = Pilot's takeoff bonus points

Bld = Pilot's landing bonus points

BldMax = The maximum landing bonus points achieved.

2.3

NAVIGATION / ESTIMATED SPEED (3.A3)

Objective

To fly a course between any combination of turn points, markers 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.

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. ($\geq 300 = 300$)

2.4

NAVIGATION / ESTIMATED SPEED / PRECISION (3.A4)

Objective

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

Special rules

- The value of T, in seconds, will be given at the briefing.
- At the start, the pilot scores 150 bonus points for a clean take off at the first attempt, 100 for the second, 50 for the third, zero for any attempts thereafter.
- All landing markers may be attempted with engine on unless the marker is in the landing deck and is the final element in the task.
- If the pilot falls over as a result of a landing: zero landing score for that landing.
- If the pilot obstructs another competitor attempting to land at a landing marker penalties will apply.

Scoring

$$\text{Pilot score} = \left(400 \times \frac{\text{NBp}}{\text{NBMax}} \right) + (250 - T) + \text{Bto} + \left(200 \times \frac{\text{Bld}}{\text{BldMax}} \right)$$

Where, according to briefing;

Either:

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

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



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. ($\geq 250 = 250$)

Bto = Pilot's takeoff score

Bld = Pilot's landing points

BldMax = The maximum number of landing points achieved in the task.

2.5 NAVIGATION OVER A KNOWN CIRCUIT (3.A5)

Follow a known circuit, finding markers or identifying ground features from photographs and locating their positions on a map or crossing hidden gates.

It may be required to distinguish between on-track and off-track markers and ground features.

There may be timing gates to take times if part of the task must be evaluated for time precision or for speed.

The task may finish with an outlanding.

Summary

Competitors will be given:

A series of headings to follow or lines drawn on a map or a description of the procedure to draw them.

The location of a start point (SP) before which no markers, ground features or gates will be found.

The time at which they must overfly the start point.

The location of a finish point (FP) after which no markers or ground features will be found.

Photos of any ground features or description of canvas markers to be identified.

If the task is to contain a speed prediction element before takeoff the competitor must either:

Declare the ground speed at which he plans to fly, or

Select a ground speed from those specified at the briefing, or

Declare crossing times at certain turn points.

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Safety

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

Scoring

Spatial precision:

Vh = Value assigned to crossing a hidden gate or properly placing a mark on the map (e.g. 100)

Nh = Number of hidden gates correctly crossed or properly placed marks on the map (less than 2 mm error).

Markers placed between 2 and 5 mm error score $\frac{1}{2}$ point.

More than 5 mm score zero.

Out of track marks score zero.

$Qh = Vh * Nh$

Time precision (when included in the task):

Vt = Gate value (e.g. 180)

Ei = Absolute error in seconds in gate i.

Maximum error is Vt.

Time gates not crossed do not add error.

$Qt = \sum (Vt - Ei)$ (sum of gate value minus time error each gate crossed)

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



Speed (when included in the task):

V_s = Relative value for the speed term

S = Pilot's speed in the speed section

$Q_v = V_s * S / S_{max}$

Total: $Q = Q_h + Q_t + Q_v$ $P = 1000 * Q / Q_{max}$

Penalties

Each photo or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Takeoff deck penalty: 20%

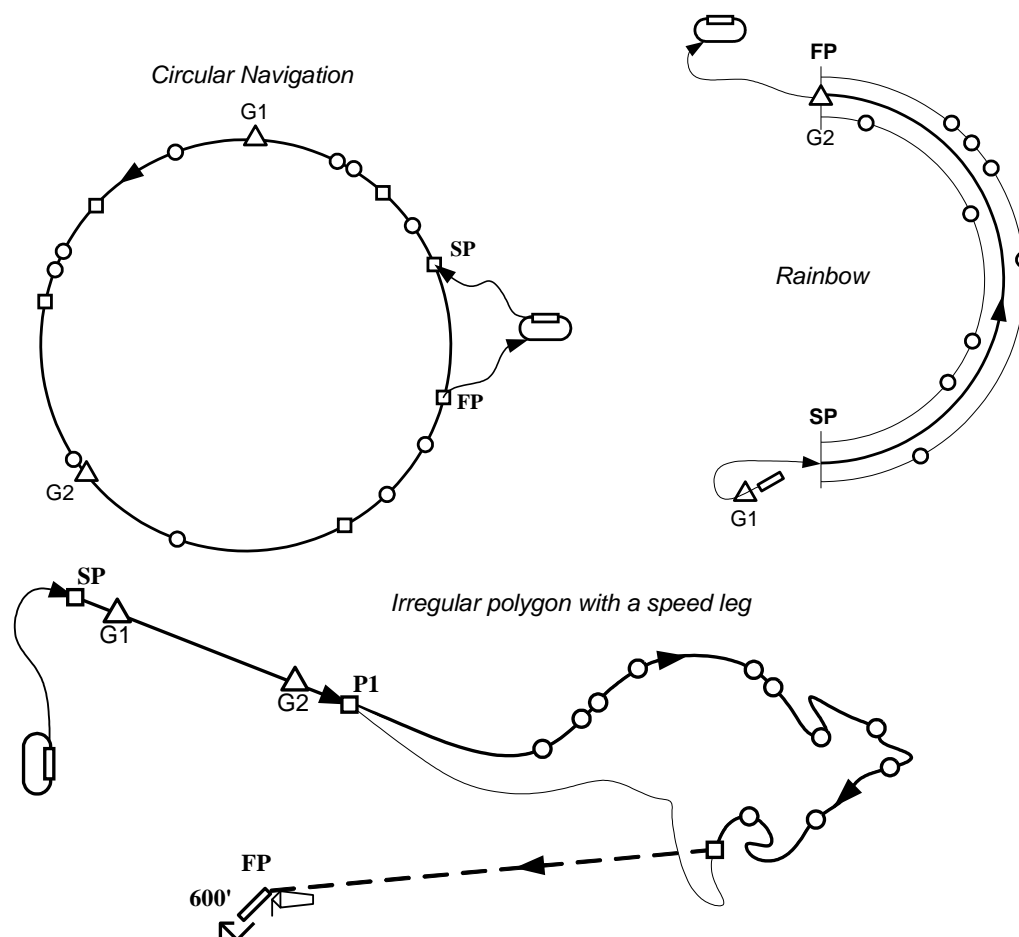
Landing deck penalty: 20%

Backtracking against the task direction or crossing a hidden gate backwards: 100%

Breach of Quarantine: 100%

Crossing a hidden gate twice invalidates the gate.

Examples



FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



2.6 NAVIGATION WITH UNKNOWN LEGS (3.A6)

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

It may be required to distinguish between on-track and off-track markers and ground features.

Certain of the ground features or markers will indicate a change of heading or the start of a leg to another point.

There may be timing gates to take times if part of the task must be evaluated for time precision or for speed.

The task may finish with an outlanding.

Summary

Competitors will be given:

A series of headings to follow or lines drawn on a map or a description of the procedure to draw them.

The location of a start point (SP) before which no markers, ground features or gates will be found.

Details of which markers or ground features indicate a point from which a new line must be drawn.

The location of a finish point (FP) after which no markers or ground features will be found

Depending on the specific task design, competitors may be given:

Sealed instructions giving the location of next turn points or outlanding sites.

The time at which they must overfly the start point.

Photos of any ground features or description of canvas markers to be identified.

If the task is to contain a speed prediction element before takeoff the competitor must either:

Declare the ground speed at which he plans to fly, or;

Select a ground speed from those specified at the briefing.

Declare crossing times at certain turn points.

The task will normally start and finish with a Deck Takeoff and Deck Landing and after completing the landing the competitor will be required to enter a Quarantine area for scoring.

Safety

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

Scoring

Spatial precision:

Vh = Value assigned to crossing a hidden gate or properly placing a mark on the map (e.g. 100)

Nh = Number of hidden gates correctly crossed or properly placed marks on the map (less than 2 mm error).

Markers placed between 2 and 5 mm error score ½ point.

More than 5 mm score zero.

Out of track marks score zero.

$Qh = Vh * Nh$

Time precision (when included in the task):

Vt = Gate value (e.g. 180)

Ei = Absolute error in seconds in gate i.

Maximum error is Vt.

Time gates not crossed do not add error.

$Qt = \sum (Vt - Ei)$ (sum of gate value minus time error each gate crossed)

Speed (when included in the task):

Vs = Relative value for the speed term

S = Pilot's speed in the speed section

$Qv = Vs * S / Smax$

Total: $Q = Qh + Qt + Qv$ $P = 1000 * Q / Qmax$

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



Penalties

Each photo or marker correctly identified and located on the map to within 2mm and any ground speed element will score as briefed. The following penalties will apply:

Take-off deck penalty: 20%.

Landing deck penalty: 20%.

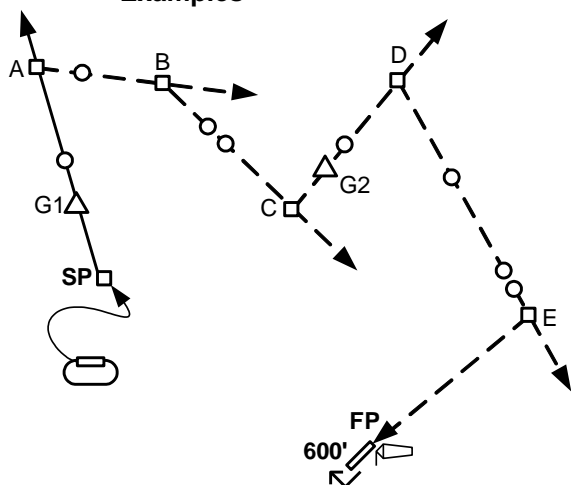
Backtracking against the task direction or crossing a hidden gate backwards: 100%

Breach of quarantine: 100%

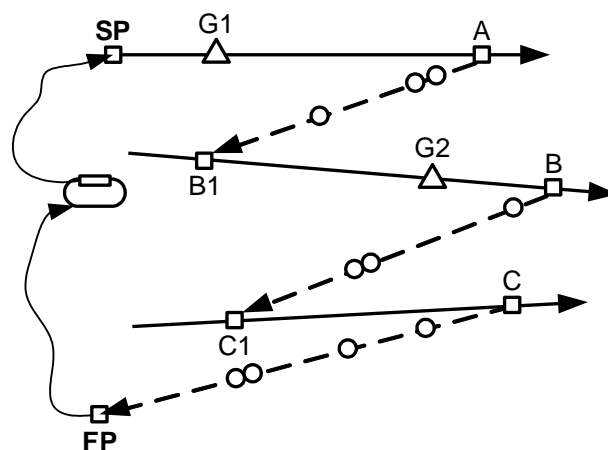
Crossing a hidden gate twice invalidates the gate.

A penalty will be specified for braking an envelope seal.

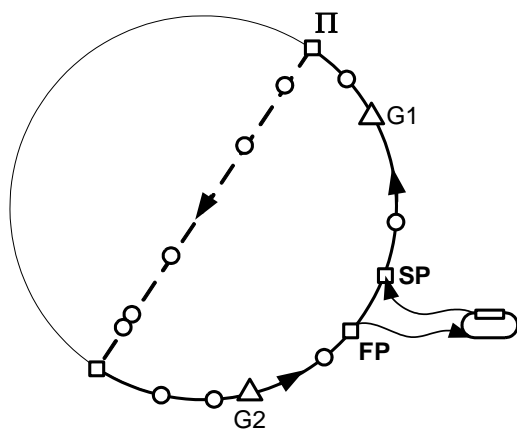
Examples



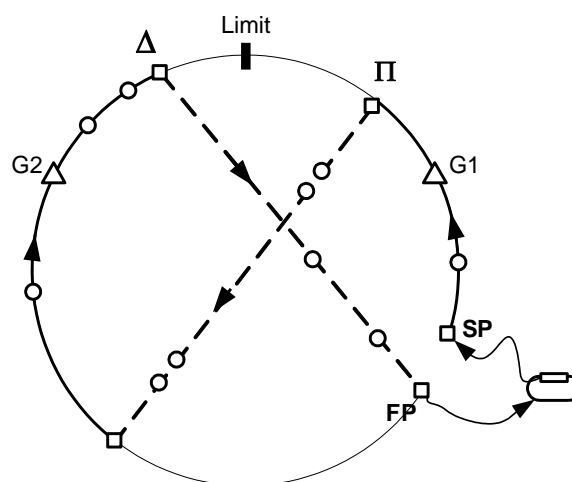
Sequential navigation



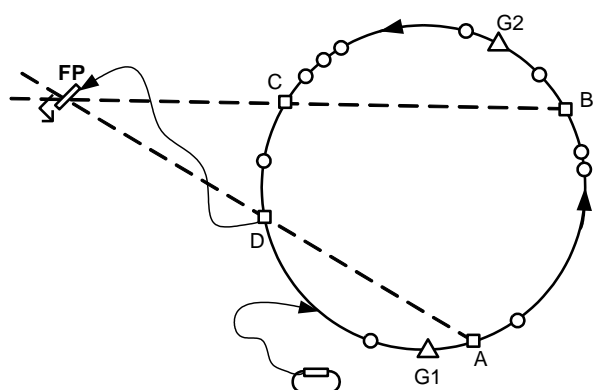
Linear navigation



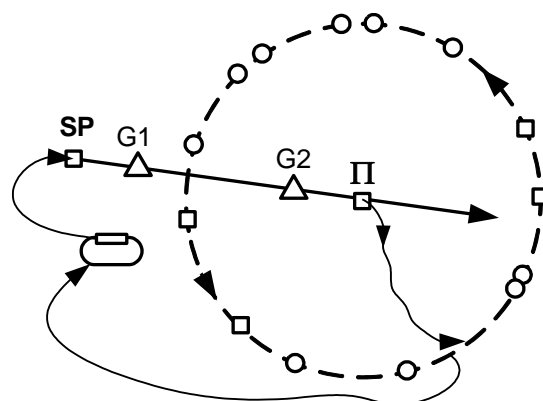
Circular navigation and diameter



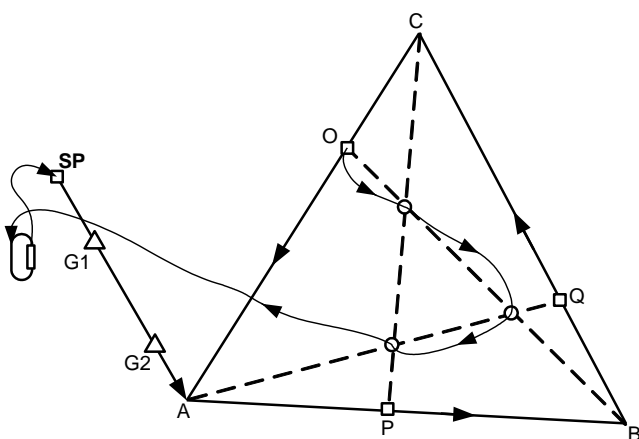
Circular navigation, diameter and reverse.



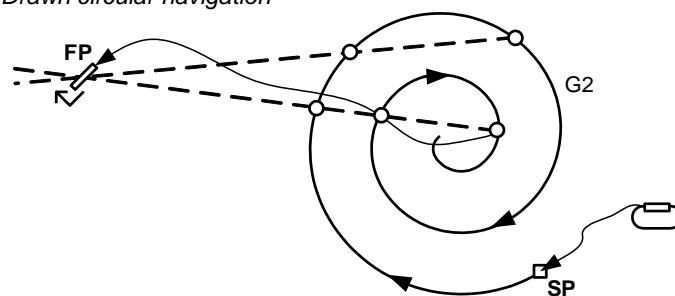
Circle and two lines



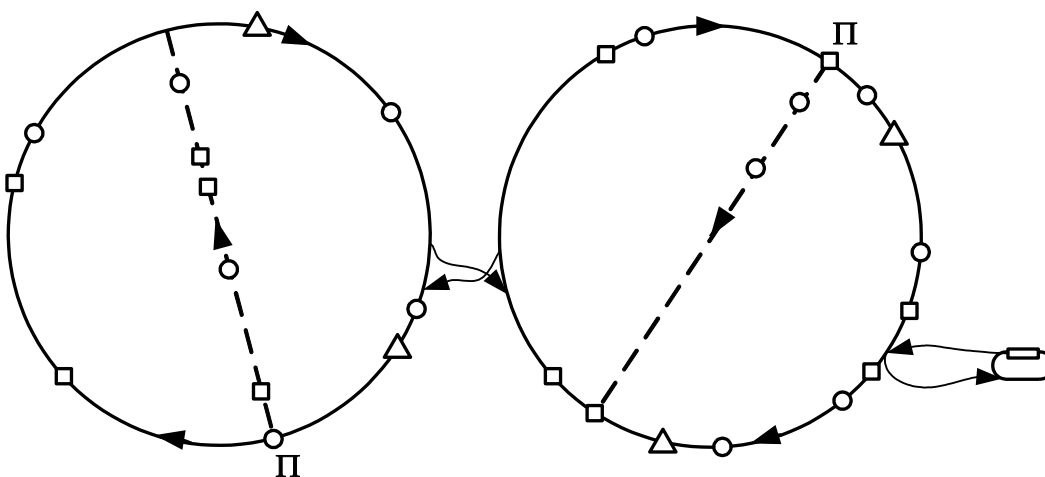
Drawn circular navigation



Triangle and three lines



Speed spiral and two lines



Double circular navigation

2.7 CURVE NAVIGATION

Precisely fly the course defined by an arbitrary line drawn on the map, with time estimations and a time limit.

Planning

Pilots will receive a course drawn on a map. If the course shows a number of known time gates, then the pilots will estimate their crossing time, counted from the start point. Before take-off, pilots will hand their declaration to a marshal.

Take-off

The director may choose to run the task with take-off at a designated time or allow pilots to take off immediately after handing their declaration to the marshal. Unless otherwise briefed, pilots will perform a standard deck take-off from their designated deck.

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



Flight

Time will start when the aircraft crosses the start point. Then pilots will precisely fly the course trying to cross the time gates in order at their estimated times. Navigation and timing end at the finish point.

There will be an undetermined number of hidden gates to validate the course. Gates must be crossed in order and proper direction. Crossing the same gate more than once in any direction invalidates the gate. Example: The sequence 1-2-4-3-5-6-5-7 will be evaluated as 1-2-4-6-7, a total of five correct gates.

Time will be measured at the known time gates (TG) and checked against pilot declarations. If a time gate is crossed more than once, time will be extracted from the first crossing. There will be a small bonus for speed along the whole course, that may include planning time if briefed.

SP	→	TG1	→	TG2	→	
T=0	Hidden gates	T1	Hidden gates	T2	Hidden gates	

Landing

After crossing the FP, pilots will proceed to land. Unless otherwise briefed, they will perform a standard deck landing at their designated decks.

After landing they will secure their aircraft and take their loggers to the download office.

Scoring

Hidden gate score

N_h = Number of hidden gates in the task

H = Number of hidden gates correctly crossed (crossed once, in order and proper direction)

$Q_h = 1000 \times H / N_h$

Known time-gate score (when the course includes known time gates). An expected time of arrival (ETA) to each gate will be calculated based on the pilot's declaration. The difference between the ETA and the real crossing is the time error for a gate.

E_i = Absolute error in seconds in gate i with a tolerance of 5 seconds and a maximum of 180.

$H_i = 180 - E_i$ (Points obtained in gate i). Time gates not crossed score zero.

$Q_t = \sum H_i$ (Sum of all gate points)

Speed score

T_{start} = Time of crossing SP or time when the pilot starts planning (according to briefing)

T_{fin} = Time of crossing FP

$T = T_{fin} - T_{start}$

T_{min} = Minimum time in the class

$Q_v = 200 \times T_{min} / T$

Total

$Q = (Q_h + Q_t) \times (1 + Q_v / 1000)$

$P = 1000 \times Q / Q_{max}$

Task-specific penalties

100% penalty for backtracking or making 360° turns.

20% penalty for an excessive delay between effective take-off and crossing the start point.

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



2.7.1 Curve Navigation – Declaration Sheet

Time gate	Estimated time of arrival in seconds counted from the start point (SP)
SP	0 s
FP	

Pilot _____

Comp. No. _____ Team _____ Class _____

Task No. _____ Date _____ Time _____

Pilot's Signature

Marshal _____

Marshal's Signature:

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



3 Economy Tasks

3.1 PURE ECONOMY (3.B1)

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.

Scoring

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

Where:

T_p = The pilot's time,

T_{\max} = The longest time taken to complete the task

3.2 ECONOMY & DISTANCE (3.B2)

Objective

To take off from the deck with a given quantity of fuel, 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.

Special rules

- Pilots must not exceed 200ft height at any time.
- Exceeding the height limitations or failure of the complete aircraft to round a pylon does not score that section.
- 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.
- If the pilot or any part of his Paramotor touches the ground during the task and takes off again, score zero.
- Flying back across a 'line of no return' score zero.
- Failure to land in a landing deck: 20% penalty.

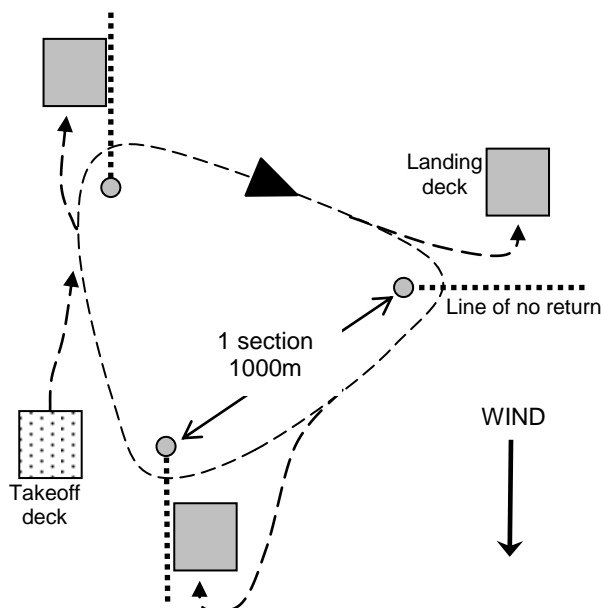
Scoring

$$\text{Pilot score} = 1000 \times \frac{L_p}{L_{\max}}$$

Where:

L_p = The number of whole sections completed by the pilot

L_{\max} = The maximum number of whole sections achieved in the task.



FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



3.3 ECONOMY & NAVIGATION (3.B3)

Objective

To take off with a given quantity of fuel and locate an unknown number of markers within defined sectors and return to the deck.

Description

Each sector will contain a given IP (initial point) and a FP (finishing point) which may be a turn point, marker or gate. The pilot flies a given track between the IP and FP. An unknown number of markers may be distributed along the track.

Special rules

- Outlanding: Score zero.

Scoring

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

Where:

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

3.4 ECONOMY & PRECISION (3.B4)

Objective

To make a clean take-off in the time window with a given quantity of fuel, stay airborne as long as possible within a defined area and land on landing markers situated within the deck before the end of the time window.

Special rules

- The pilot scores 300 bonus points for a clean take off at the first attempt, 200 for the second, 100 for the third, zero for any attempts thereafter.
- Departure from view of the marshals or egress from the permitted flight area will incur penalties.
- When landing, If the pilot elects to switch off his engine at least 5m above a marker and:

Makes a first touch on the marker: Landing bonus: 200 points

If the pilot elects to not switch off his engine and:

Makes a first touch on the marker: Landing bonus: 50 points

- If the pilot falls over as a result of the landing: zero landing bonus.
- If the pilot obstructs another competitor attempting to land at a landing marker penalties will apply.

Scoring

$$\text{Pilot score} = \left(500 \times \frac{\text{Tp}}{\text{Tmax}} \right) + \text{Bto} + \text{Bld}$$

Where:

TP = The pilot's time

Tmax = The longest time taken to complete the task

Bto = Takeoff bonus points

Bld = Landing bonus points

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



3.5 SPEED TRIANGLE AND OUT AND RETURN (3.B5)

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

Fuel quantity allowed: (Suggested: 6 litres)

Part 1: Speed; The pilot take off time is noted. The pilot flies to one or more turnpoints and returns to the deck where he is timed.

Part 2: Distance; The pilot then flies in a given direction to a point of pilot choice and returns to the deck.

Special rules

- Land out before completing part 1: Score zero.
- Land out before completing part 2: Score zero for part 2.
- Failure to takeoff or land entirely in the deck: 20% penalty.

Scoring

$$\text{Pilot score} = \left(500 \times \frac{t_{\text{Min}}}{t_p} \right) + \left(500 \times \frac{dp}{d_{\text{Max}}} \right)$$

Where:

t_p = the pilot's time,

t_{Min} = The best time (Part 1)

dp = the pilot's distance

d_{Max} = the greatest distance (Part 2)

3.6 PURE ECONOMY (unlimited fuel version of task 3.B1)

Objective

To take off from the deck with an unlimited quantity of fuel and achieve the best possible fuel consumption (litres/hour), remaining airborne for at least one hour before returning to the deck.

Special Rules

- Free take-off window
- Departure from view of the marshals or egress from the permitted flight area may incur penalties.
- Pilots may be timed for their duration using a timing gate and logger records or manually from launch to landing. The amount of fuel used, divided by the duration gives the fuel consumption (litres/hour).
- Pilots are weighed immediately prior to launch and immediately after landing in accordance with the process described in the Rules & Regulations
- Pilots may carry as much fuel as they wish - as described in the Local Regulations para 3.2.4.

Scoring

$$\text{Pilot score} = (1000 \times FC_{\text{min}} / FC_p)$$

Where:

FC_p = The fuel consumption of a pilot (litres/hour).

FC_{min} = The minimum scored fuel consumption.

Penalties

- Penalty for flying less than one hour (50%)
- Landing outside the deck (100%)
- Leaving the deck after landing BEFORE being re-weighed (100%)

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



- If there is a land-by time or period with penalty thereafter (100%)
- Ballasting – disqualification.

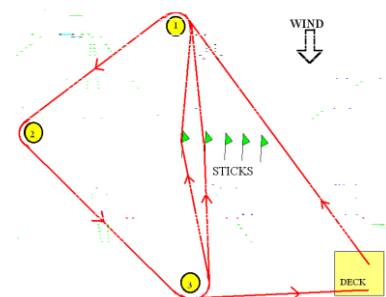
3.7 ECONOMY & DISTANCE (unlimited fuel version of task 3.B2)

Objective

To take off from the deck with an unlimited quantity of fuel, fly a given number of laps, ideally at least 40km total distance (for instance 20 x 2km laps) then return to the deck, having used as little fuel as possible.

Special rules

- Pilots are weighed immediately prior to launch and immediately after landing in accordance with the process described in the Local Regulations para 3.2.4.
- Pilots must not exceed 200ft height at any time.
- Exceeding the height limitations or failure of the complete aircraft to round a pylon does not score that lap.
- Each lap must be validated by kicking one stick on the upwind leg. Only one attempt at kicking a stick per lap is permitted. A missed stick results in a void lap.
- There are several sticks available to kick to avoid congestion.
- 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.
- Laps will be counted manually and may be verified using loggers, which will also be used to check height.
- Pilots may carry as much fuel as they wish.



Penalties

- Penalty for landing outside the deck (100%)
- Penalty for leaving the deck after landing BEFORE being re-weighed (100%)
- Penalty for not flying the minimum required number of laps (100%)
- No penalty for flying more laps than the required number.
- If the pilot or any part of his Paramotor touches the ground during the task and takes off again, score zero.

Scoring

Pilot score = (1000 x FUpin / FUp)

Where:

FUp = The amount of fuel used by a pilot to fly the task

FUpin = The minimum amount of fuel used by any pilot incurring no penalties.

3.8 ECONOMY & NAVIGATION (unlimited fuel version of task 3.B3)

Objective

To take off with an unlimited quantity of fuel and locate an unknown number of waypoints in a defined area within a given elapsed time window, while achieving the best possible fuel consumption (litres/hour) before returning to the deck.

Description

After launching (or crossing the start gate), pilots are to collect as many waypoints from a given list (may be provided on maps) or to fly the maximum distance possible, flying for no less than the minimum time and no longer than the maximum time, before landing in the deck (or crossing the finish gate).

Special Rules

- Pilots are weighed immediately prior to launch and immediately after landing in accordance with the process described in the Local Regulations para 3.2.4.

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



- Time limit (for example 2 hours) with penalties for being late (for example 50%).
- There may also be a minimum time limit (for example 1 hour) with penalties for being early, (for example 50%).
- The Championship Director may set the task to either score on the number of waypoints visited or the distance flown (measured as straight lines between waypoints). In the latter case, waypoints may only be collected once (whether deliberate or accidental), so once crossed, are not available for re-use.
- Pilots may carry as much fuel as they wish.
- Time starts from launch (or start gate) and ends on landing (or finish gate).
- Penalty for landing outside the deck (100%).
- Penalty for leaving the deck after landing BEFORE being re-weighed (100%).

Scoring

$$\text{Pilot score} = (500 \times \text{NBp} / \text{Nbmax}) + (500 \times \text{FCmin} / \text{FCp})$$

Where:

NBp = The number of waypoints a pilot collects in the task (or the distance flown)

NBmax = The maximum number of waypoints scored or (maximum distance flown)

FCp = The fuel consumption of a pilot (litres/hour)

FCmin = The best fuel consumption achieved by a pilot incurring no penalties.

3.9 SPEED TRIANGLE AND OUT AND RETURN (unlimited fuel version of task 3.B5)

Objective

To take off with an unlimited quantity of fuel and fly around a given triangular circuit in the shortest possible time and then fly as far as possible in the direction of the pilot's choice (unless briefed otherwise) before returning to the deck, whilst achieving the best possible fuel range (km per litre) for the whole flight.

The fuel range (km per litre) is calculated as the whole flight distance divided by the quantity of fuel used.

Description

Part 1: Speed: Prior to launch, the pilot is weighed in accordance with the process described in the Local Regulations para 3.2.4. The pilot's take-off time is recorded manually or a start time recorded by crossing a start gate. The pilot flies the given circuit and returns to the deck where he is timed, either by kicking a stick on arrival to stop the clock for the speed element or by crossing a gate to be timed by the loggers

Part 2: Fuel Range: The pilot then flies to one or two points of his/her choice (as briefed) in order to maximise the distance and therefore, the overall range. He/she then returns to the deck where he/she is re-weighed to calculate fuel used. The direction of the first point may be given.

Special Rules

- There will be a maximum elapsed time limit.
- The second element may require pilots to fly to (and subsequently declare) 2 distant points on the map, such that the 'out and return' distance is calculated from the total of three legs. This may be used where available airspace is limited.
- Penalty for exceeding time limit (50% of range score).
- Penalty for landing outside the deck (100%).
- Penalty for leaving the deck after landing BEFORE being re-weighed (100%).

Scoring

$$\text{Pilot score} = (500 \times \text{Tmin} / \text{Tp}) + (500 \times \text{FRp} / \text{FRmax})$$

Where:

Tp = The pilot's time in the speed section

Tmin = The fastest time achieved in the speed section

FRp = The fuel range achieved by a pilot (km per litre) for the whole flight

FRmax = The maximum fuel range achieved by any pilot incurring no penalties.

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



~~A note about Paramotor precision tasks~~

~~Most precision tasks with slalom poles and/or pylons are designed to be run in either a 50m grid, a 70.71m grid or a 100m grid. It is then convenient for the organizer to set up the task area according to the grid in the drawing which gives the maximum flexibility in any wind direction with the minimum of hole digging.~~

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



4 Precision Tasks

4.1 PRECISION TAKE-OFF AND LANDING (3.C1)

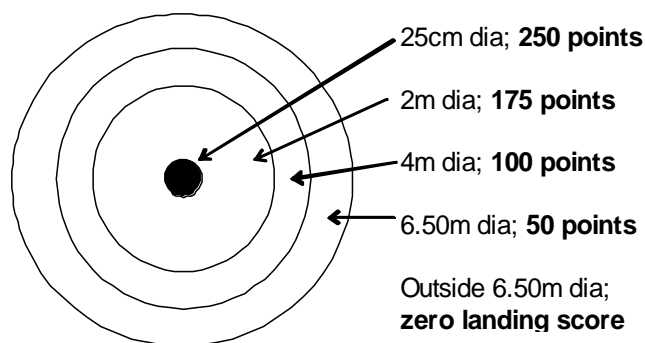
Objective

To make a clean take off at the first attempt in the deck, and subsequently land as near as possible to a target.

Description

The pilot is permitted four takeoff attempts, climbs to 500ft overhead the target, cuts the engine before passing through a gate and tries to make a first touch as near as possible to the centre of a target consisting of:

- A series of concentric circles for PF1 and PF2 classes.
- A series of 5m wide parallel strips for PL1 and PL2 classes



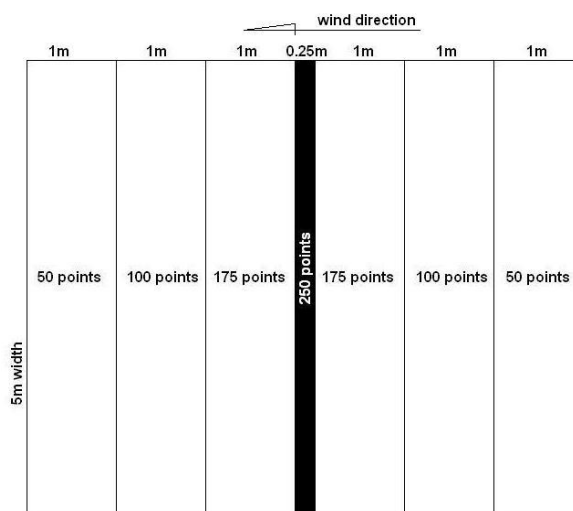
Special rules

- The pilot scores 250 points for a clean take off at the first attempt, 170 for the second, 90 for the third, zero for the fourth.
- The circuit to be flown will be detailed at briefing.
- The first touch of the ground by the pilot's foot (PF) or the aircraft wheels (PL) is the point from which the pilot's score will be derived. A first touch on the line scores the higher score. When more than one PL wheel touches simultaneously, the point chosen is the one in favour of the pilot.
- Contestants will be awarded a zero score if the pilot or any part of the aircraft touching the ground outside the deck while undertaking the task.
- Contestants will be awarded a zero landing score for:

Engine not stopped before the gate.

Gate not passed correctly.

Falling over as a result of the landing.



Outside rectangle; zero landing score

Scoring

Pilot score = (Bto + Bld)

Where:

Bto = Takeoff points

Bld = Landing points

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



4.2 THE FOUR STICKS (3.C2)

Objective

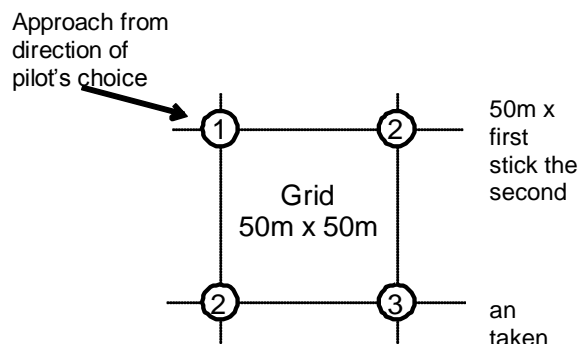
This task is intended as a small break task between elements of an overall task.

Description

There are 4 standard kicking sticks set at the corners of a 50m square. The pilot must kick 3 of the 4 sticks. The stick the pilot kicks may be any of the 4 sticks. The third pilot kicks must be diagonally opposite the first, the stick may be either of the two other sticks.

Special rules

- If this task is used to take a time for the purposes of element of the overall task then the time shall be the moment the pilot strikes the first stick.
- The pilot may have as many attempts as necessary at striking the first stick.
- Only ONE attempt is allowed at kicking both the second and third sticks.
- There shall be one group of 4 sticks for every 15 competitors in the task.
- On approach to the task, pilots should choose a "free" group of sticks. However if, in the opinion of the marshals on duty a conflict with another aircraft existed (depending on the overall task, for example if there is a timing involved) both should kick only one stick 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.



Scoring

The scoring should be integrated into the overall task as NQ. If the pilot fails to kick either the second or third stick then for each stick then the penalty shall be no more than 5% of the overall task score.

4.3 PRECISION TAKE-OFF AND LANDING (3.C3)

Objective

To make a clean take off at the first attempt in the deck, and subsequently land as near as possible to a target which is:

- A point for PF1 and PF2 classes
- A 5 m long line marked on the ground perpendicular to the wind direction for PL1 and PL2 classes.

Description

The pilot is permitted four takeoff attempts, climbs to 500ft overhead the target, cuts the engine before passing through a gate and tries to make a first touch as near as possible to the centre of a target.

Special rules

- The pilot scores 250 points for a clean take off at the first attempt, 170 for the second, 90 for the third, zero for the fourth.
- The circuit to be flown will be detailed at briefing.
- The first touch of the ground by the pilot's foot (PF) or the aircraft wheels (PL) is the point from which the pilot's score will be derived. When more than one PL wheel touches simultaneously the point chosen is the one in favour of the pilot.
- Zero score if the pilot or any part of the aircraft touches the ground outside the deck while undertaking the task.

Contestants will be awarded a zero landing score for:

- Engine not stopped before the gate.
- Gate not passed correctly.
- Falling over as a result of the landing.

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



Scoring

$$\text{Pilot score} = \text{Bto} + \left(250 \times \frac{D_p}{D_{\min}} \right)$$

Where

Bto = Pilot's takeoff score.

Dmin = x - the closest distance to the target achieved by any pilot.

Dp = x - the pilot's distance to the target (> x m = zero landing score).

The value of x, in metres will be given at briefing but may be between 10 and 25 metres depending on the meteorological conditions. This outer zone should be marked by cones or some other visual indication in the form of:

- A circle for PF1 and PF2 classes,
- Two 5m long lines parallel to the target for PL1 and PL2 classes.

4.4 SHORT TAKE-OFF OVER A FENCE (3.C4)

Objective

To take off and clear a fence from as short a distance as possible. This task is intended to be included as a small element of another task.

Description

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

When takeoff permission is granted, pilots takes off and tries to fly over the fence. Maximum distance of pilot's feet on the ground to the fence is scored.

Special rules

- If the pilot's feet have not left the ground and the line of the fence is not reached at the first attempt then one second attempt is permitted.
- Zero fence score for breaking the fence or weaving.

Scoring

The scoring should be integrated into the overall task scoring as F. If the pilot fails to clear the fence then the penalty shall be no more than 10% of the overall task score.

$$\text{Pilot score} = \left(100 \times \frac{F_{\min}}{F_p} \right)$$

Where

Fmin = The shortest distance in metres for a takeoff over the fence

Fp = The pilot's takeoff distance to clear the fence.

Notes

A fence may simply be 2 kicking sticks with a 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 distance measured is the maximum distance the pilot is away from the fence whilst touching the ground, thus if the pilot steps away from the fence during launch then this distance shall be included.

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

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



4.5 SHORTEST TAKE-OFF (3.C5)

Objective

To take off in as short distance as possible. This task is intended to be included as a small element of another task.

Description

Takeoff permission is granted after the pilot has indicated he is ready to take off. The maximum distance on the ground, from where the pilot's feet or aircraft wheels have been since the start signal, to where the pilot's feet or aircraft wheels permanently leave the ground will be measured and scored. (permanently is defined as aircraft is airborne for more than 10 sec.)

Special rules

- There will be time and distance limits established at briefing according to the weather conditions. If not otherwise briefed, the time limit for this task is 1 min. No restrictions on number of attempts within the time limit. No penalties for the wing touching the ground on each attempt. If not otherwise briefed, the distance limit is 30 m. Exceeding either time or distance limits will be signaled with red flag and scored zero.

Scoring

Pilot score = $100 \times (S_{min} / S_p)$

Where

S_{min} = The shortest distance in metres for a takeoff.

S_p = The pilot's takeoff distance.

The scoring can be done separately or may be integrated into the overall task scoring as S. If the pilot scores 0 then the penalty shall be no more than 10% of the overall task score.

Notes

Marking pilot's footsteps or wheels on the ground can be a tricky task for marshals. Using 2-3 m long rods (sail battens, fishing rods or similar) has proven to be effective to help in fixing visual observation results on the ground before they are measured.

Alternative methods can be developed and used for more precise measurements

4.6 PRECISION CIRCUIT IN THE SHORTEST TIME ('Clover leaf slalom') (3.C6)

Objective

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

Description

4 pylons 2m in height are laid out

- At the corners of a 70.71m square for PF1 and PL1 classes.
- At the corners of a 100m square for PF2 and PL2 classes.

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

The pilot enters the course 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).

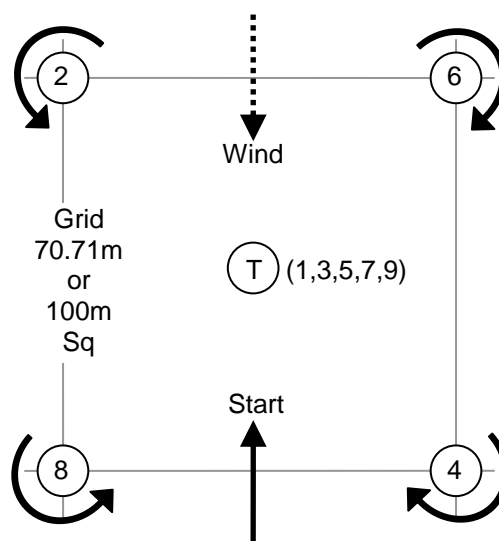
Special rules

- A valid strike on the target T is:

EITHER one where the pilot or any part of the Paramotor has been clearly observed to touch it.

OR when electronic 'kick stick' sensors which have been shown to meet the standard tests are used, a valid strike is one which is recorded by the device.

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



FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



- A strike on target 1 starts the clock, a strike on target 9 stops the clock.
- Pilots may have only one attempt at striking each target except for the first and last targets where three attempts at each are permitted.
- Failure to strike the first or last target or round at least one pylon or touch the ground at any point between them: score zero.
- The grid may be opened up to max. 100M at the briefing if the meteorological conditions dictate.

Scoring

$$t_{pen} = t_{pil} + mv_{pen}$$

$$Q = \ln \left(\frac{3t_{best}}{t_{pen} - t_{best} + 3} \right)$$

here

t_{pil} = the measured pilots time (seconds)

m = the number of missed targets

v_{pen} = the time penalty for each missed target (seconds)

t_{pen} = the pilots time (after penalties for missed targets)

t_{best} = the best time (after penalties for missed targets)

Q = the task value before normalization

Note: Spreadsheet formulas:

$t_{pen} = t_{pil} + m * v_{pen}$

$Q = \text{LOG}(3 * t_{best} / (t_{pen} - t_{best} + 3))$

or

$Q = \text{LOG}(3) + \text{LOG}(t_{best}) - \text{LOG}(t_{pen} - t_{best} + 3)$

4.7

PRECISION CIRCUIT IN THE SHORTEST TIME ('Japanese slalom') (3.C7)

Objective

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

Description

4 pylons 2m in height are laid out on

- On a 50 m x 50 m grid for PF1 and PL1 classes,
- On a 70,71 m x 70,71 m grid for PF2 and PL2 classes.

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.

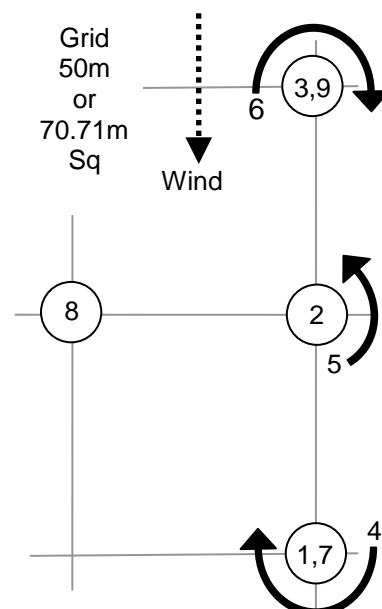
Special rules

- A valid strike on a target is:

EITHER one where the pilot or any part of the Paramotor has been clearly observed to touch it.

OR when electronic 'kick stick' sensors which have been shown to meet the standard tests are used, a valid strike is one which is recorded by the device.

- When targets are acting as pylons, to count as a strike, the pilot's body must be clearly seen to round it, pylons 1 & 3 must be rounded in a CLOCKWISE direction and pylon 2 must be rounded in an ANTI CLOCKWISE direction.
- A strike on target 1 starts the clock, a strike on target 9 stops the clock.
- Pilots may have only one attempt at striking each target except for the first and last targets where three attempts at each are permitted.



FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



- Failure to strike the first or last target or touch the ground at any point between them: score zero.

Scoring

$$t_{pen} = t_{pil} + mv_{pen}$$

$$Q = \ln \left(\frac{3t_{best}}{t_{pen} - t_{best} + 3} \right)$$

Where

t_{pil} = the measured pilots time (seconds)

m = the number of missed targets

v_{pen} = the time penalty for each missed target (seconds)

t_{pen} = the pilots time (after penalties for missed targets)

t_{best} = the best time (after penalties for missed targets)

Q = the task value before normalization

Note: Spreadsheet formulas:

$t_{pen} = t_{pil} + m * v_{pen}$

$Q = \text{LOG}(3 * t_{best} / (t_{pen} - t_{best} + 3))$

or

$Q = \text{LOG}(3) + \text{LOG}(t_{best}) - \text{LOG}(t_{pen} - t_{best} + 3)$

4.8

PRECISION CIRCUIT IN THE SHORTEST TIME ('Chinese slalom') (3.C8)

Objective

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

Description

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

The pilot enters the course into wind 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.

Special rules

- A valid strike on a target is:

EITHER one where the pilot or any part of the Paramotor has been clearly observed to touch it.

OR when electronic 'kick stick' sensors which have been shown to meet the standard tests are used, a valid strike is one which is recorded by the device. 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 correctly. (S10 5.7)

- A strike on target 1 starts the clock, a strike on the last target stops the clock.
- Pilots may have only one attempt at striking each target except for the first and last targets where three attempts at each are permitted.
- Failure to strike the first or last target or at least two of the intermediate targets, or any inflatable pylon, or touch the ground at any point between them: score zero.

Scoring

$$t_{pen} = t_{pil} + mv_{pen}$$

$$Q = \ln \left(\frac{3t_{best}}{t_{pen} - t_{best} + 3} \right)$$

Where

t_{pil} = the measured pilots time (seconds)

m = the number of missed targets

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



v_{pen} = the time penalty for each missed target (seconds)
 t_{pen} = the pilots time (after penalties for missed targets)
 t_{best} = the best time (after penalties for missed targets)
 Q = the task value before normalization

Note: Spreadsheet formulas:

$t_{pen} = t_{pil} + m * v_{pen}$
 $Q = \text{LOG}(3 * t_{best} / (t_{pen} - t_{best} + 3))$
 or
 $Q = \text{LOG}(3) + \text{LOG}(t_{best}) - \text{LOG}(t_{pen} - t_{best} + 3)$

Note to Director: This task is ideally suited for sites where there are physical features which obscure a direct view from one target to the next.

4.9 FAST / SLOW SPEED (3.C9)

Objective

To fly a course as fast as possible and then as slow as possible (or vice versa).

Description

A straight course consisting of four equally spaced 'kicking sticks' between 150m and 300m long is laid out facing approximately into wind.

The course shall be flown twice. The order will be briefed (fast then slow or slow then fast).

The pilot makes a timed pass along the first course, returns to the start, and makes a second timed pass in the same direction.

There may be two courses but they must be of equal dimensions and orientation and separated by at least 200m flying distance.

Special rules

- A valid strike on a stick is:

EITHER one where the pilot or any part of the Paramotor has been clearly observed to touch it.

OR when electronic 'kick stick' sensors which have been shown to meet the standard tests are used, a valid strike is one which is recorded by the device.

- For each course, the clock starts the moment the pilot kicks the first stick and stops the moment he kicks the fourth stick.
- The pilot may have 3 attempts at kicking the first stick on each run.
- If the pilot misses the second or third stick then he is considered 'too high', penalty 50% course score for each stick missed.
- The maximum time allowed for a pilot to complete each course is 5 minutes.

In the slow course;

- If the pilot or any part of his Paramotor touches the ground or the fourth stick is missed: $Vp2 = \text{null}$ and $Ep = \text{zero}$
- If the pilot zigzags: Score zero.

In the fast course;

- If the pilot or any part of his Paramotor touches the ground: $Vp1 = \text{zero}$ and $Ep = \text{zero}$
- The pilot may have three attempts at kicking the fourth stick.

$$\text{Pilot score} = \left(0.25 \times Q \times \frac{Vp_1}{V_{\max}} \right) + \left(0.25 \times Q \times \frac{V_{\min}}{Vp_2} \right) + \left(0.5 \times Q \times \frac{Ep}{E_{\max}} \right)$$

Where:

Q = Maximum task score between 500 and 1000 points, as briefed.

V_{\max} = The highest speed achieved in the fast course without penalties, in Km/H

$Vp1$ = The speed of the pilot in Km/H in the fast course.

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



V_{min} = The lowest speed achieved in the slow course without penalties, in Km/H

V_{p2} = The speed of the pilot in Km/H in the slow course.

E_p = The difference between the pilot's slowest and fastest speeds, in Km/H

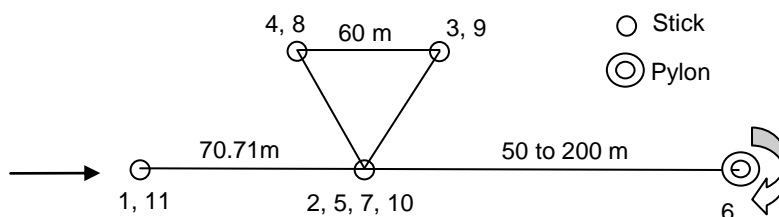
E_{max} = The maximum difference between scored slowest and fastest speeds after penalties, in Km/H

4.10 ROUND THE TRIANGLE (3.C10)

Course description

The course consists of 4 sticks to be kicked and another stick or pylon as a turn point.

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



Flying the course

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, 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.

Detail rules

- A valid strike on a target is:

EITHER one where the pilot or any part of the Paramotor has been clearly observed to touch it.

OR when electronic 'kick stick' sensors which have been shown to meet the standard tests are used, a valid strike is one which is recorded by the device.

- The pilot's body must be clearly seen to round pylon 6 clockwise.
- Pilots may have only one attempt at striking each target except for the first and last targets where three attempts at each are permitted.

Scoring

$$t_{pen} = t_{pil} + mv_{pen}$$

$$Q = \ln \left(\frac{3t_{best}}{t_{pen} - t_{best} + 3} \right)$$

Where

t_{pil} = the measured pilots time (seconds)

m = the number of missed targets

v_{pen} = the time penalty for each missed target (seconds)

t_{pen} = the pilots time (after penalties for missed targets)

t_{best} = the best time (after penalties for missed targets)

Q = the task value before normalization

Note: Spreadsheet formulas:

$$t_{pen} = t_{pil} + m * v_{pen}$$

$$Q = \text{LOG}(3 * t_{best} / (t_{pen} - t_{best} + 3))$$

or

$$Q = \text{LOG}(3) + \text{LOG}(t_{best}) - \text{LOG}(t_{pen} - t_{best} + 3)$$

Penalties.

Touch the ground at any point between first and last strikes: Zero score.

Any part of the aircraft crosses the crowd line or dangerous flying: DSQ



4.11 THE EIGHT (3.C11)

Course description

The course consists of one central stick and another two sticks or pylons 50 m away on both sides.

Flying the course

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.

The course may be flown in a mirror image pattern consistent with the description above.

If briefed, the course may be flown only once, accumulating a total of 5 possible targets.

Detail rules

- A valid strike on a target is:

EITHER one where the pilot or any part of the Paramotor has been clearly observed to touch it.

OR when electronic 'kick stick' sensors which have been shown to meet the standard tests are used, a valid strike is one which is recorded by the device.

- The pilot's body must be clearly seen to round the pylons clockwise or anticlockwise as indicated.
- Pilots may have only one attempt at striking each target except for the first and last targets where three attempts at each are permitted.

Scoring

$$t_{pen} = t_{pil} + mv_{pen}$$

$$Q = \ln \left(\frac{3t_{best}}{t_{pen} - t_{best} + 3} \right)$$

Where

t_{pil} = the measured pilots time (seconds)

m = the number of missed targets

v_{pen} = the time penalty for each missed target (seconds)

t_{pen} = the pilots time (after penalties for missed targets)

t_{best} = the best time (after penalties for missed targets)

Q = the task value before normalization

Note: Spreadsheet formulas:

$$t_{pen} = t_{pil} + m * v_{pen}$$

$$Q = \text{LOG}(3 * t_{best} / (t_{pen} - t_{best} + 3))$$

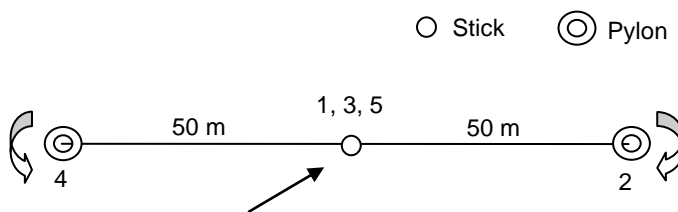
or

$$Q = \text{LOG}(3) + \text{LOG}(t_{best}) - \text{LOG}(t_{pen} - t_{best} + 3)$$

Penalties.

Touch the ground at any point between first and last strikes: Zero score.

Any part of the aircraft crosses the crowd line or dangerous flying: DSQ



4.12 BOWLING LANDING (3.C12)

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 2 m.



Landing pins

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



The pins are 50 cm high for PF classes and 100 cm high for PL classes and they are covered by dense foam. They can simply stand on 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, or when the pin falls down.

Pilots will fly to 500ft and cut the engine before crossing a briefed gate.

They will fly a minimum of 60 seconds and will try to hit as many pins as possible before touching the ground. Each pin hit before touching the ground will score 50 points (maximum 250 points).

This task may be combined with a precision take-off.

Scoring

PId = 50 points for each pin hit (maximum of 250 points)

Penalties

Not crossing the gate or crossing it engine on: zero landing score.

Flying less than 60 seconds with no engine: zero landing score.

Falling over during landing or two knees on the ground: zero landing score.

4.13 PRECISION PARABALL (3.C13)

Objective

Deliver balls to a target (basket or hole) or as close to the target as possible, either by carrying or hitting with feet, as quickly as possible.

Description

The target is a hole or basket between 0.5-2m in diameter. The optimum is a hybrid of hole and basket; a hole with edges between 20-50cm above ground. Construction should be light for safety reasons but strong enough to hold the force of a flying ball and to keep balls inside.

Between 3-5 soft or half-empty balls of different sizes are placed downwind from the target on marked start positions. The distance between the balls and the target should be between 20–50m.

The pilot approaches a ball, collects it with his feet and carries it to the basket. Alternatively the pilot can kick the ball towards the target. This is repeated with the other balls until all the balls are in the basket or time is up.

A maximum task time limit is set. Timing starts with the touch of the first ball, the first attempt to touch a ball or when passing the first ball. Timing ends when the last ball enters the target (or when the maximum time limit is reached).

Scoring is based on the time taken from start of task until all balls are in the target. If the maximum time limit is reached, the number of balls in the target is counted and the distances of the remaining balls from the target are measured.

Special rules

There are no limitations to the number, angle, speed or height of approaches to the balls and the technique for hitting or carrying the balls.

Balls must stay in the target. Bouncing out from the target will give the result according to the distance from the target.

The pilot may contact, and move on, the ground but the wing may not touch the ground before time is up. The penalty if the wing touches the ground before the end of the time limit = score 0 for time.

The maximum time limit assigned to this task depends on the amount of balls, distances, the balls' properties, target size and weather conditions. For example, with 3 balls a suitable time limit is 3 or 4 minutes.

The maximum time limit is signalled by a marshal with an appropriate (red) flag and a whistle. Results are then measured from this state. If a pilot is carrying a ball when the time limit is reached, he is allowed up to 30 seconds extra time to deliver the ball to the target. This extra time finishes when the pilot next drops the ball, giving the pilot one chance to deliver the ball to the target.

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



Pilots must land in the landing deck immediately after the task is performed. Pilots must then remove all of their equipment from the task area immediately.

Details and changes to these rules will be briefed.

Scoring

Balls delivered into the basket will score maximum points

Balls inside the radius of 5 m from the edge of the basket: 50 % of ball score

Balls moved from its original location but outside of the 5 m radius: 20 % of ball score

Balls not moved from their original position: no points

N = balls carried into the basket minus penalties depending on the ball's position.

T = time in seconds from the start signal to the finishing the task

$$P_q = 700 * N / N_{max}$$

$$P_s = 300 * (180 - T + T_{min}) / 180$$

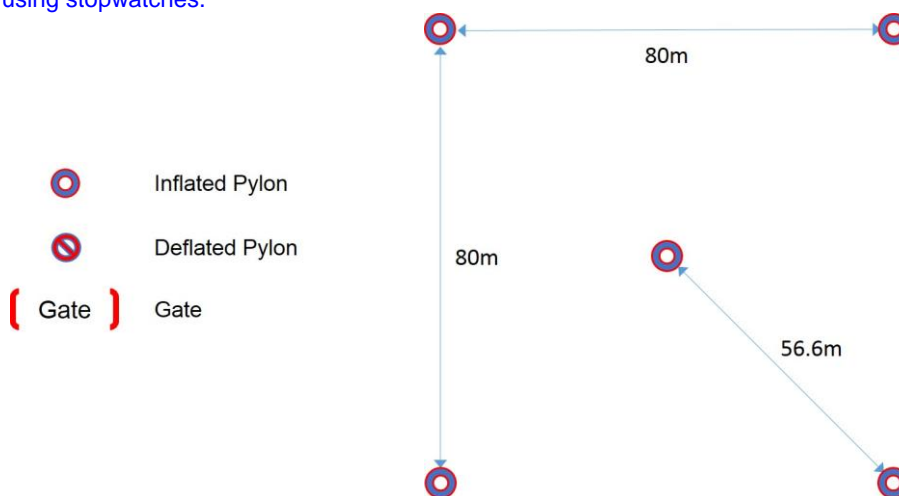
$$P = P_q + P_s$$

$$\text{Formula} = x * 330$$

4.14 THE PYLON SQUARE

Course description

The courses consists of a start gate, a finish gate and between two and five pylons, from tange of layouts based on a standard configuration as shown in the diagram. Where electronic timing gates are not available, these may be replaced by sticks which must be kicked to start and stop the task time. If sticks are used, timing will be manual, using stopwatches.



Flying the course

The pilot enters the course as briefed and flies through the start gate. They should then follow the course as briefed and leave through the finish gate. See example task below.

Detailed rules

- Every part of the aircraft must be clearly seen to round the pylons clockwise or anticlockwise as indicated.
- Pilots may have only one attempt at rounding each target except for the first and last targets where three attempts at each are permitted.
- The start and finish gates may be set inside or outside the square. Their positions will be briefed before the start of the task.
- The pylons may be between 8 and 12 metres in height.
- For the purposes of scoring, the start and finish gates are not counted as targets.

Scoring

N = number of pylons rounded correctly, ie, correct order and correct direction of turn.

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



T = time from passing through the start gate to passing through the finish gate in 10ths of a second if timed manually or 100ths of a second if timed electronically.

Q = N3 / T

P = 500 x Q / Qmax

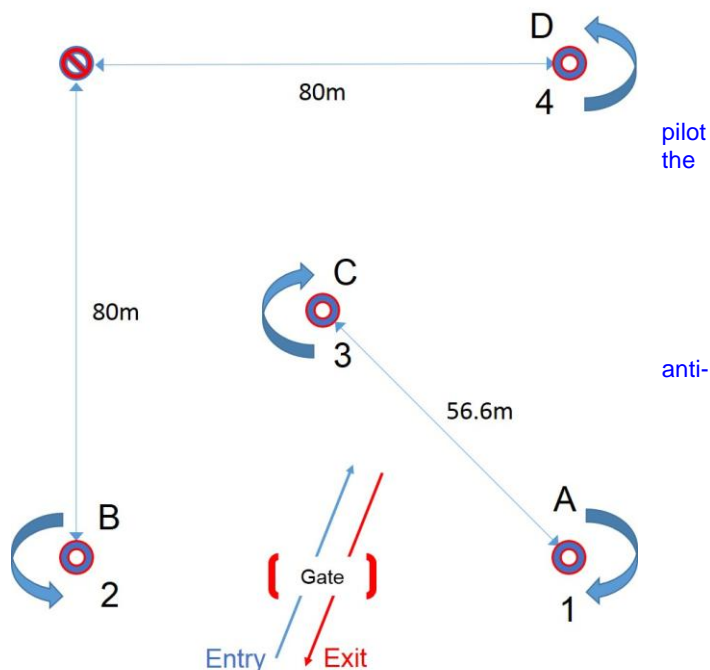
Penalties.

- The top surface of the wing may touch the pylons, but if any other part of the aircraft should make contact, that pylon shall be deemed to have not been rounded correctly. Pilots are encouraged to aim not to make contact – this provision is to make an allowance for the pylon moving due to the wind, wake turbulence or the venture effect.

Example task: The “Y”

On the green flag (or any other signal determined by the Competition Director), the pilot enters the course through the start gate in direction of the “Entry” arrow and timing starts at this moment.

The pilot flies towards pylon A, rounding it clockwise, then flies to pylon B which he rounds anti-clockwise, as indicated on the diagram. He then flies to pylon C, rounding it clockwise and on to pylon D which he rounds clockwise. Finally, he flies through the finish gate, as indicated by the “Exit” arrow, at which point the timing stops.



3.N1 — NOISE IN CLIMB

Objective

From a stationary position on the ground in front of a line and using a fixed throttle (and propeller pitch) setting of pilot choice, the pilot takes off and climbs in a straight line over a microphone set 300m distant from the line. The max noise in dBA of the aircraft is measured.

Special rules

— Weaving, failure to fly directly over the microphone, changing throttle or propeller pitch setting: Zero score.

Scoring

$$\text{Pilot score} = 500 \times \left(\frac{n_{\text{Min}}}{n_{\text{P}}} \right)$$

Where:

nMin = The minimum noise in dBA achieved in the class

nP = The noise achieved by the pilot in dBA

FAI World Paramotor Championships 2014

Task Catalogue

Matkópuszta, Hungary, 6–16 August 2014



3.N2 ~~MINIMUM NOISE IN LEVEL FLIGHT~~

Objective

~~To fly two legs of a course in opposite directions as quietly as possible.~~

Description

~~The course is between two points 300m apart and must be flown in a straight line at a height of 25ft (± 10ft). at a pilot selected constant throttle and propeller pitch setting. The microphone is positioned 100m offset from the centreline and equidistant from the two points.~~

Special rules

~~— Weaving, changing height, throttle or propeller pitch setting whilst in the course: Zero score for that run.~~

Scoring

$$\text{Pilot score} = \left(250 \times \left(\frac{nMin_1}{nP_1} \right) \right) + \left(250 \times \left(\frac{nMin_2}{nP_2} \right) \right)$$

~~Where:~~

~~nMin1 and nMin2 = The minimum noise in dBA achieved on each run in the class.~~

~~nP1 and nP2 = The noise achieved by the pilot in dBA on each run.~~