LOCAL REGULATIONS AND TASK CATALOGUE

Version 1 – 04/2026

FOR THE 2026
BRITISH OPEN PARAMOTOR CHAMPIONSHIPS
BRITISH NATIONAL PARAMOTOR CHAMPIONSHIPS

Location: Hollow Tree Farm, Buckingham
16 – 21 June 2026

Organiser: British Paramotor Competitions Committee (a panel of the BHPA)

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The British Open Paramotor Championships would not be possible without the network of BHPA paramotor schools who have supported paramotor competitions in the UK for many years, and who play such an essential role in ensuring the development of the sport, training pilots to competition level, and ensuring the skill set and safety of British paramotor pilots. The championship organisation team gratefully acknowledge their significant contribution to our sport.

1. Rules and Regulations

1.1 ORGANISATION

1.1.1 AUTHORITY AND STATUS OF THE RULES

These regulations govern the organisation and conduct of the BHPA British Paramotor Championships.

They combine local regulations specific to the championship with applicable provisions of the FAI Sporting Code – General Section and Section 10 (Microlights and Paramotors).

Where these rules are silent or ambiguous, the provisions of the FAI Sporting Code Section 10 (2026) shall apply.

The official versions of these regulations and associated documents will be published by the organisers prior to the competition. Any amendments will be issued through official briefings and the official communication channel.

1.1.2 MANAGEMENT AND LEADERSHIP

The competition is organised by the British Paramotor Competitions Panel under the authority of the BHPA.

The competition organisation will normally include:

- Competition Director
- Event Director
- Chief Marshal
- Chief Scorer
- Safety Officer
- Task Committee (if appointed)
- Jury

The Event Director has overall authority for the conduct of the competition and interpretation of these rules.

1.1.3 AUTHORITY OF THE COMPETITION DIRECTOR

The Competition Director has the authority to take any action necessary to ensure the safety and fairness of the competition.

This may include:

- grounding pilots
- suspending or cancelling tasks
- modifying task procedures
- imposing safety restrictions

Decisions taken for safety reasons are final.

1.1.4 APPLICATION OF RULES

Anyone participating in, or in any way connected with the British Open (including all flyers, not just competitors) shall be bound by the rules of the competition and accept any consequences arising from participation in the event.

1.2. OBJECTIVES OF THE CHAMPIONSHIP

1.2.1 GENERAL OBJECTIVES

The objectives of the British Paramotor Championships are:

a. To determine the British National Champion(s) and British Open Champion(s) in the available classes, where sufficient entrants constitute a valid Championship.

b. To encourage participation in competitive events and foster goodwill amongst pilots.

c. To reward pilot skills and encourage manufacturers' equipment design for aircraft performance.

d. To help select the National Team.

The competition may be open to international pilots; however only eligible competitors may be awarded national titles.

1.2.2 INTERNATIONAL PARTICIPATION

The British Open welcomes foreign pilots but only UK permanent residents are entitled to win the British National Champion title

1.3 DEFINITIONS

1.3.1 CHAMPIONSHIP FORMAT

The format of the championship is predominantly based on distance navigation, following the FAI 'Endurance' format principle. A series of precision navigation task options will be included within a master turnpoint hunt navigation task.

1.3.2 AIRCRAFT

Competitors may enter in the following classes:

PF (Foot-launched Paramotor):

A paramotor where launch and landing are performed on foot.

PL (Wheeled Paramotor):

A paramotor mounted on a wheeled carriage.

All aircraft must comply with the general definition of a powered paraglider as recognised by the relevant national authority.

1.3.2 CHAMPIONSHIP CLASSES

Competitors may enter in the following classes:

OPEN CHAMPIONSHIP:	DISCOVERY:
PF1: Solo Foot-launched Paramotor	PF1d: Solo Foot-launched Paramotor (Discovery)

PF1f: Solo Foot-launched Paramotor Female

PL1: Solo Paramotor Trike PL1d: Solo Paramotor Trike (Discovery)

Each class is valid only with a minimum of 4 pilots entering.

1.3.3 CHAMPIONSHIP TROPHIES

At the end of the event, trophies will be awarded to the British Champion, The Open Champion, The Discovery Challenge Champion, and the top 3 scoring pilots in each valid class. Additional awards are also made for:

- Best Newcomer (if two or more eligible pilots are flying in a validated class)
- Highest Placed Female Pilot (if two or more eligible pilots are flying in a validated class)
- The Barry Holleran Navigation Trophy (for the highest scoring pilot in purely navigation tasks)
- The Precision Trophy (for the highest scoring pilot in purely precision tasks)
- The Dan Burton X Contest Trophy (to the highest ranking British pilot in the previous year's Paramotor X Contest)
- The Johan Bossuyt Trophy for contribution to the Paramotor Community

1.3.4 DISCOVERY CHALLENGE

The Discovery Challenge offers new entrants and lower airtime pilots an opportunity to try out competition-style flying, and to develop their skills, without committing to the full challenge of navigating over much longer distances without GPS assistance.

Pilots will fly similar tasks to the main championship, but are permitted to use GPS for navigation in addition to the issued maps, and they are not subject to restrictions on the use of smartphones or other navigation aids. They are also not required to switch off their engines at 500ft for precision landing tasks. Specific details of 'Discovery Options' as a variation to the full task are described in the individual task catalogue sections, and will be briefed.

There will be trophies awarded for 1st, 2nd, and 3rd placed pilots in the Discovery challenge, but in recognition that some new pilots are not comfortable with this level of competition, Discovery Challenge pilots may opt out of having their names and scores included in the officially published score sheets.

For insurance reasons, the entry requirement for the Discovery Challenge is BHPA Pilot (Power) level, as with the main championship classes.

1.4 PILOT REQUIREMENTS

1.4.1 ELIGIBILITY

British Competitors must:

- Hold a valid BHPA Pilot (Power) qualification (which includes 3rd party liability insurance to £5m)
- Have minimum 30 hours airtime, and adequate recent flying experience - "currency"

Foreign Competitors must:

- Be legally permitted to fly in their own country according to their national regulations
- Hold valid 3rd party liability insurance to a minimum of £1.3m or equivalent currency
- Have minimum 30 hours airtime, and adequate recent flying experience - "currency"

The organisers may refuse entry if a pilot does not demonstrate adequate documentation, safety or competence.

1.4.2 ENTRY AND REGISTRATION

All competitors must complete registration prior to flying.

At registration, pilots must be prepared to present:

- Proof of pilot qualification

- Valid membership of the relevant national association

- Proof of insurance

- Any additional documentation requested by the organisers

Minimum age for participation is 14 years (parental consent required for all participants under 18).

The organisers reserve the right to refuse entry or restrict participation if a pilot does not meet safety or administrative requirements.

1.4.3 ENTRY FEES AND WITHDRAWAL

Entry fees, payment deadlines and refund policies will be specified by the organisers.

The organisers reserve the right to retain fees in the event of late withdrawal or non-attendance.

1.4.4 FITNESS

The use of non-prescribed drugs, including alcohol, likely to impair a pilot's performance is prohibited. Any injury, drugs or medication taken which might affect the pilot's performance in the air must be reported to the Director before flying.

At all times, pilots must assess their own fitness to fly.

1.5 EQUIPMENT REQUIREMENTS

1.5.1 AIRWORTHINESS

All equipment used in the competition must be airworthy and suitable for the event. It is the pilot's responsibility to certify this.

All pilots' equipment may be subject to inspection by marshals at any time during the competition and the pilot may be prevented from flying if deemed to be unsafe.

Aircraft must be capable of completing typical cross-country tasks safely.

As guidance, aircraft should be capable of a minimum still-air range of approximately 100 km.

The Competition Director may restrict participation of aircraft deemed unsuitable for the tasks.

1.5.2 AIRCRAFT AND OTHER EQUIPMENT

Each aircraft shall fly throughout the championships as a single structural entity using the same set of components as used on the first day except that propellers and carburettor jets may be changed. Any further changes to equipment, eg. replacement of parts as a result of damage, must be approved by the director. Such changes will normally be permitted, but will be subject to a default penalty of 20% applied to any subsequent tasks flown, in which the replacement equipment is deemed by the director to offer any potential advantage to the pilot. For tasks in which no advantage can be gained by the used of the replaced equipment, this penalty may be waived, again at the director's discretion.

Aircraft must be flown with manufacturer standard fuel systems only. No pilot modifications to fuel systems such as additional tanks are permitted, except for standard maintenance replacement of fuel pipes, bulbs, and filters. Small header tanks or "comp bottles" may be used provided that they conform to the following limitations:

- Approved by the manufacturer of the aircraft, as evidenced by availability for sale to all pilots through the manufacturer's public website.
- Maximum 1.5 litre volume bottle, as a single structural entity
- If an electric pump is used, it must be certified for use specifically with gasoline.
- Flow metering devices are permitted but must be certified for use specifically with gasoline.

It is the responsibility of the pilot to provide evidence of conformity to these regulations to the championship organisers, and gain approval, in advance of arrival at the site.

1.5.3 MANDATORY EQUIPMENT

A protective helmet must be worn whenever the pilot is strapped into the harness of an aircraft. Paramotor engines may only be started on the back of the pilot (i.e. not resting on the ground), and when the pilot is wearing a helmet.

An emergency parachute system is mandatory. It is the pilot's responsibility to ensure that this is in a safe and serviceable condition.

1.5.4 PROHIBITED EQUIPMENT

The following are prohibited unless specifically defined by a task director:

1.5.1 Any accessory or item considered dangerous by the director

1.5.2 disposable ballast

1.5.3 gyro instruments or other equipment permitting flight without reference to the ground

1.5.4 equipment modifications giving unfair performance advantage

1.5.5 Radios or any other electronic communications equipment

1.5.7 GPS, VOR, PDA with electronic map, Smartphone, or any other electronic aid capable of imparting useful navigational information to the pilot. GPSs may be carried with the express permission of the Task Director, but must be sealed and then checked by a Marshal, to ensure that the display is not visible to the pilot. On landing, the sealed GPS must be presented to a Marshal who shall verify that the seal is not broken. If a seal is broken or the Marshal believes that the GPS has been used by the pilot, the pilot may be penalised or disqualified.

1.5.5 ELECTRONIC DEVICES AND FLYING AIDS

The organisers may supply an approved GNSS flight recorder for scoring. Competitors may (and are strongly advised to) carry a backup GPS unit of their own, but if they can be used to aid navigation, these must be sealed before flight and signed off by a marshal.

Flight recorders must:

- be carried, and logging, for all flights during the period of the event (including training days before competition, and free-flying during the event if permitted.
- remain with the aircraft throughout the flight
- record continuously
- be presented for download when requested.

Official flight recorder data normally takes precedence for scoring.

Competitors are not permitted to use any other navigational aids except in the case of task 2.5 (FAI Triangle), if briefed. Mobile phones may be carried for use in rescue if landing out, but must checked as switched off and be sealed by marshals before flight.

Sealed devices may only be accessed in the presence of a marshal.

Breaking a seal without authorisation may result in disqualification.

Devices may only be unsealed during a task for essential reasons such as battery replacement, and must be resealed as directed.

Failure to comply with device restrictions may result in penalties or disqualification.

1.5.6 EQUIPMENT CHANGES AND DAMAGE

Aircraft shall normally be flown as a single structural entity throughout the competition.

Replacement of components due to damage is permitted with approval from the Competition Director.

If replacement equipment is deemed to provide an advantage, a penalty may be applied to subsequent tasks at the discretion of the Director.

1.6 PROCEDURES

1.6.1 QUARANTINE

Quarantine procedures may be used during tasks where external assistance could influence navigation or task performance.

When quarantine is declared:

- Pilots must remain within the designated quarantine area.
- Pilots may not communicate with any person outside the quarantine area except competition officials.
- Access to communication devices and electronic navigation aids may be restricted.

Devices that may be restricted include:

- mobile phones
- radios
- GNSS navigation devices
- tablets or computers
- internet-connected devices

Competition officials may inspect and seal such devices.

Breaking a device seal or accessing restricted devices during quarantine may result in penalties or disqualification. Quarantine procedures will be explained during the task briefing.

1.6.2 EXTERNAL ASSISTANCE TO PILOTS

Any assistance to pilots on the ground is encouraged, although if Airside, this must be from BHPA members only for insurance reasons. Anyone other than registered competition pilots must wear hi-vis when airside.

No assistance may be provided to pilots in flight or in relation to navigation or task performance.

External assistance includes:

- receiving navigation advice from persons on the ground
- receiving weather or routing information during a task
- receiving guidance via radio, phone or internet
- receiving assistance that could influence task performance

The following are normally permitted:

- pre-task planning
- assistance with launching and ground handling
- assistance after landing

Ground crew may assist pilots with equipment, recovery and logistics provided that no information affecting task performance is communicated during the task.

Violation of the external assistance rule may result in penalties or disqualification

Any pilot observing that another pilot has landed and has not folded their canopy within three minutes is obliged to render assistance. The Director will decide on appropriate measures after the event to ensure that this does not disadvantage the pilot giving assistance.

1.6.3 BRIEFINGS

All pilots must attend the General Briefing online, typically held one week prior to the competition. This will be recorded for those who cannot attend. All essential information relating to the tasks, the map area, airspace restrictions, the flying site and local rules will be given at this briefing, with the exception of the detailed precision route maps.

Daily briefings will provide:

- flight window opening and closing times
- detailed task descriptions
- weather information
- safety instructions
- additional airspace restrictions
- take-off and landing procedures

Information provided during briefings carries the status of competition regulations.

1.6.4 COMPETITION COMMUNICATION

The organisers will establish an official communication channel for the competition.

This may include:

- an online messaging group
- official notice boards
- the competition website or scoring system

Important information such as:

- task announcements
- schedule changes
- safety notices
- scoring updates

may be distributed through this channel.

Pilots are responsible for monitoring official communications.

1.7 FLYING AND SAFETY REGULATIONS

1.7.1 PILOT RESPONSIBILITY

Each pilot takes off, flies, and lands entirely at their own risk.

The organisers accept no responsibility for any damage, injury, or loss incurred during the competition.

1.7.2 COMPLIANCE

All aircraft must conform with the UK definition of a Self-Propelled Hang Glider (including Paramotors) as defined by the CAA in the current Air Navigation Order. They should have a range sufficient for a flight of at least 100 Km in still air.

All pilots must comply with:

- UK national aviation law
- local airspace restrictions
- competition safety procedures

Pilots must conduct themselves in a manner that does not endanger, or cause nuisance to, other pilots or persons on the ground.

1.7.3 TASK PERIODS

Competition flying will normally take place between 07:00 and 22:00 daily, throughout each day of the competition. The Competition Director will declare specific task periods during which competition flying may occur. No single navigation task period (flying window) will exceed 4 hours.

Task periods may be adjusted due to:

- weather conditions
- operational constraints
- airspace restrictions

Because weather across the whole competition area may vary significantly, it will be pilots' sole responsibility to make appropriate decisions whether and where to take off or not, where and when to fly and land and to take care of their safety.

A pilot shall be deemed to be 'on task' from the time when he/she enters the launch deck until the time when he/she leaves the landing deck at the end of the task, or in the case of out-landings, when he/she personally reports back to the Comp HQ. This definition is independent of task timings, which operate specifically from crossing of start and finish lines.

The Competition Director may suspend or cancel tasks at any time if conditions become unsafe. Task suspension may include temporary halting of take-offs.

In the event of task cancellation, a message with the word "CANCEL" will be broadcast to all competitors through the official communication channel. Competition and all scoring will stop at the time the message is sent, and scores will be calculated up to the time of cancellation unless otherwise specified.

If flying is cancelled by the director, competitors will retain any points they have scored for the day up to the time of cancellation.

Airtime will be computed automatically from the GPS track, and there will be a penalty for exceeding this. The computation of airtime shall be defined as the time between the first time a pilot crosses one of the defined SP/FP points after take-off, and the final time that they pass an SP/FP point before landing. This rule is in place for safety reasons, because it removes any incentive to rush a landing approach in order to avoid penalties for a late return. For pilots who fail to cross the SP/FP on either their outbound or return flights, their flight time will be computed from the precise moments of take-off and landing at the airfield, and all points gained on that particular flight will be subject to a 20% penalty.

1.7.4 PREPARATION FOR FLIGHT

Each aircraft shall be given a pre-flight check by its pilot before every flight and may not be flown unless it is serviceable.

Each competitor is obliged to assess the weather conditions with reference to his/her own capacity as a pilot and the performance of his/her equipment before making a decision to fly.

1.7.5 FLAGS

A flag pole adjacent to the deck will show:

a. No flag on display: The championship window is closed, no flying to take place

b. Green Flag: The task has started and the launch window has opened. Pilots may take-off on a task. If the green flag is NOT flying at the announced time, then the window is deemed not to be open (e.g. due to a delay or because the Director considers the weather to be unsuitable for flying the task). All times associated with start times are delayed until such time as the green flag is flying.

c. Yellow Flag: The launch window is temporarily closed and pilots may not take-off. However, if they are already

airborne and undertaking a task, then they may continue.

d. Red Flag or Jolly Roger: ALL pilots are to land immediately / not take-off. Applies to free flyers and competitors.

e. A blue tarpaulin with a yellow X marked on it, spread on the take-off deck, signifies to pilots in the air that they should land immediately, but in a remote part of the airfield, because an accident has occurred and there may be an emergency service helicopter may be inbound. Pilots should be extra vigilant in this case.

e. Union Jack (British Flag): Free flying is permitted by registered competitors and registered non-competitors but all competition restrictions apply to ALL pilots (including no fly zones). The Director retains the right to impose penalties during free-flying, including grounding non-competitors.

1.7.6 AIRFIELD DISCIPLINE

All pilots must comply with airfield procedures and marshal instructions at all times.

Unsafe behaviour, failure to follow instructions, or actions that endanger others may result in penalties or removal from the competition.

Only authorised persons may enter operational areas of the airfield.

All non-competing persons airside must comply with safety requirements, including high visibility clothing where required.

1.7.7 TAKE-OFF AND LANDING PROCEDURES

All take-offs and landings in the competition must be made on foot (except in the case of PL1) without the assistance of any unauthorised 3rd party, any kind of vehicle or any external power source.

Take-off order (if used) and procedures will be announced during briefings.

Pilots must follow marshal instructions at all times on the take off or landing deck.

Landing must normally occur within the designated landing area.

Unsafe approaches or landings may result in penalties.

Any touch of the ground by pilot or aircraft outside the airfield boundary will constitute an out landing.

Pilots are expected to conclude their day's tasks by landing back at the airfield, or another final landing point if defined in the briefing. Failure to do so, or landing at any point not designated as a landing zone, will be considered an Outlanding.

Out landings as described above shall result in a 50% reduction in the points scored up to the point of landing during that flight. For these purposes, a "flight" is considered to be an outward and return journey starting and finishing at the base airfield (i.e. landing at a fuel depot does not start a new "flight"). This penalty is applied to points scored on all navigation tasks (2.1, 2.2, and 2.3 and 2.4) attempted during the same flight.

If a pilot lands out with an engine or other problem during the task, they may, within the flying window, and if it is safe to do so, repair their aircraft, and take off again, but in this case they must return directly to the airfield and they are not eligible to score any further points during that navigation window until they have reported back to the airfield. When resources allow, roving marshal teams in vehicles will be assigned to assist with retrievals.

If a pilot has an out landing, they must inform the organisers by telephone, with the minimum of delay and at the latest by the closing time of the task.

Upon out landing, a pilot must fold up their canopy within three minutes of landing. A canopy that has not been folded within three minutes indicates that the pilot is in need of help. Any pilot who observes such a situation is obliged to render assistance and contact the organisation as soon as possible. A competitor landing to help an injured pilot shall not, at the discretion of the Director, be disadvantaged by this action.

The above procedure is evidently not applicable when the wing is being laid out for take-off, but pilots should beware not to leave the equipment laid out ready and then wait for long periods before taking off.

1.7.8 PRECISION LANDINGS

For precision landing tasks:

In PF: The objective is for the pilot to make a good landing on his own two feet without falling over. "Falling over as a result of the landing" will be interpreted as:

- GOOD: If the pilot falls to ONE knee - landing score as achieved.
- BAD: If the pilot falls to TWO knees OR if any part of the power unit (with exception of throttle cable or speedbar) touches the ground during the landing process - zero landing score.

In PL: The objective is for the pilot to make a good landing after which the aircraft comes to rest the right way up and without any damage. Zero landing score if the aircraft comes to rest off all its wheels or is structurally damaged in any way, although failure to restart the engine will not incur a penalty.

In tasks where the pilot is asked to switch off his engine above 500 feet, the engine must be stopped for a minimum period of 45 seconds before any part of the aircraft or the pilot touches the ground.

1.7.9 FUEL PROCEDURES

At the airfield, all refuelling of paramotors is to take place ONLY in the designated refuelling area.

Certain tasks may include fuel measurement or fuel restrictions.

Where fuel limitations apply:

- the amount of fuel will be specified by the director at the briefing
- The amounts of fuel allowed may be different for each competition class
- fuelling to the specified limit will be done under supervision of marshals
- fuel tanks may be sealed by competition officials
- equipment may be inspected before and after the task

Refuelling outside authorised procedures is not permitted.

1.7.10 AIRFIELD BOUNDARIES AND LOCAL RESTRICTIONS

The competition airfield and surrounding airspace may include restricted areas.

Pilots must remain clear of:

- designated local No Fly Zones
- CAA controlled airspace
- populated areas where flight is restricted by law

Airspace maps and restrictions will be provided at briefings.

Violation of restricted airspace may result in penalties or disqualification.

1.7.11 FLIGHT LIMITATIONS

All manoeuvres considered dangerous are forbidden, whether a danger to the pilot, other aircraft or the public, or not.

Flight in clouds is strictly forbidden.

Air Law must be observed and a proper look out must be kept at all times. It is every pilot's responsibility to avoid a collision with another. Any aircraft joining another aircraft in a thermal shall circle in the same direction as that established by the first, regardless of height separation.

No competitor may take off during the competition from the contest site without the permission of the Task Director or a Marshal. This permission may be indicated through the flags system in 3.12.1.

Permission may be given for a test flight but if the task for that class has started the pilot must land and make a competition take-off on the task. Practising prior to a precision landing task is not permitted.

Once a task has been declared, reconnaissance of the route in any aircraft or vehicle is forbidden.

1.7.12 COLLISION AVOIDANCE

Pilots are responsible for maintaining safe separation from other aircraft at all times.

When thermalling or manoeuvring in shared airspace, pilots must adopt a consistent direction of turn.

Any action that creates a collision risk may result in penalties or disqualification.

1.7.13 EMERGENCY PROCEDURES

In the event of an incident on the airfield or landing area:

- Pilots must follow marshal instructions immediately

- Approaches to the landing area must be adjusted as directed

- Alternate landing areas may be designated

If a pilot observes another pilot in difficulty, they must render assistance where safe to do so and notify the organisers as soon as possible.

A pilot who lands to assist another may, at the discretion of the Competition Director, not be penalised for this action.

1.8 SCORING

1.8.1 GENERAL

The championship will use Gaggle flight tracking software, for the majority of our navigation task scoring. Whilst the principles of the tasks remain the same as in 2024, the precise scoring formulae in this document are new, resulting from the algorithms by which Gaggle processes flight tracks.

The overall results will be computed from the sum of the task scores for each competitor, the winner having the highest total score in the class. (S10 4.34.10)

A score given to a competitor shall be expressed to the nearest whole number, 0.5 being rounded up. (S10 4.34.13)

All distances not obtained from GNSS shall be calculated from the official map and rounded up to the next 0.5 km. (S10 4.34.14)

Deduction of penalty points shall be made after scoring for that task is completed. (S10 4.34.16)

If a pilot's score is for any reason negative including penalties his score for the task shall be taken as zero. Negative scores shall not be carried forward. (S10 4.34.18)

The following standard symbols will be used for scoring:

V = Speed, D = Distance, T = Time

Score sheets shall state the date for the task and the date and the time when the score sheet was issued, the task number, classes involved, competitors name, country, competition number and score.

Each valid class shall be scored on a separate score sheet.

Score sheets shall be marked Interim, Provisional, and Official, or if a protest is involved, Final. A Provisional score sheet shall only become Official after all complaints have been

answered by the Director. Scores shall not be altered when the Provisional sheet is made Official. (S10 4.34.3)

When interim score sheets are published, a pilot who has not yet attempted a navigation task will be marked as DNFY or “Did Not Fly Yet”. This signifies that they may still attempt that task on one of the subsequent days of the championship.

When provisional score sheets are published, it indicates that a task is closed and will not be available again during the championship. This will activate the final deadline for complaints about that task. A pilot who did not fly, scores zero and will be marked DNF or "Did Not Fly" on the score sheet. A pilot who is disqualified scores zero and will be marked DSQ or "Disqualified".

Due to the nature of endurance championships, by which precision navigation tasks are widely spread across a large map area, it is pilot choice which of the navigation task options they choose to attempt. Not all pilots will attempt all tasks, so the rule S.10 4.34.18 does not apply.

If a failure in GNSS flight analysis or scoring is discovered before the end of the championship and the failure is due to a technical error which emanates from the equipment being used for the GNSS flight analysis or scoring, this failure must be corrected regardless of time limits for complaints and protests. (S10 4.34.19)

1.8.2 UNSPORTING BEHAVIOUR

Any behaviour considered unsporting or contrary to the spirit of the competition may result in penalties or disqualification at the discretion of the Competition Director.

1.8.3 PENALTIES

In general, any infringement of any flying, safety or task regulations will result in penalty.

Minimum height for the competition as defined by the director will apply at all times when outside of the defined start and finish lines near to the airfield. A 20% penalty will be applied to the total score for that flight, for each incursion below minimum height that lasts longer than 5 seconds in sequence. If the period of time below minimum height is longer than 5 minutes, the penalty is increased to 50%.

The law of the United Kingdom as defined by the Air Navigation Order applies to all pilots.

Actions which will normally result in disqualification:

a. Bringing the event, its organisers, the FAI or the sporting code into disrepute.

b. The use of banned substances.

c. Unauthorised interference with an aircraft in a Secure Area.

d. Flight outside the specified flight envelope of the aircraft or dangerous flying.

e. Flight or attempted flight with prohibited equipment.

f. Unauthorised assistance during a task.

g. Interference with the firmware or software of a CIMA approved GNSS flight recorder

Backtracking

Backtracking within a precision navigation corridor is a serious safety risk and penalised accordingly.

Backtracking is automatically detected by the Gaggle scoring software, when a pilot track crosses more than one hidden gate prior to one already crossed.

1.8.4 ALTERNATIVE EVIDENCE

If a failure of flight recording equipment occurs, alternative evidence such as backup GPS devices or other verifiable data may be considered at the discretion of the Competition Director.

The decision of the Director in such cases is final.

1.8.5 COMPLAINTS

A pilot may submit a complaint regarding competition matters to the Competition Director.

Complaints must be presented not later than 4 hours after the respective provisional score sheet has been displayed, not counting the time between 22:00 and 07:00, except for the tasks of the last competition day, or for provisional score sheets published on the last competition day, when the time limit is 1 hour. Complaints must be submitted in writing through the officially designated channel (usually an online form).

The Competition Director will review the complaint and provide a decision.

1.8.6 PROTESTS

In the event that a competitor is not satisfied with the outcome of his complaint, they may lodge a Protest in writing to a Jury, accompanied by a £50 protest fee. The protest fee will be refunded if the protest is upheld either during the competition or later at appeal.

The Jury shall consist of three suitably qualified persons not directly involved in the incident under protest.

Where possible, the Jury should include experienced competition pilots or officials independent of the decision being challenged.

The decision of the competition jury will be final.

1.8.7 CHAMPIONSHIP VALIDITY

The Championships will be considered valid if a minimum of the equivalent of five hours' task flying throughout the period of the championship is available and open to competitors.

1.9 AMENDMENTS TO THE RULES

The organisers may amend these rules if required for safety or operational reasons.

Any amendments will be announced through official communication channels.

1.10 DEFINITIONS FOR TASKS

One full set of colour printed competition maps will be provided to each competitor. The following features will be indicated on the official competition map:

DECK: The designated take-off area from which competition launches are conducted.

AF: Airfield.
Does not score as a turnpoint unless also briefed as a precision landing task.

TP: A standard turnpoint to be flown through, defined by a circle of 250m radius centred on a map feature.
Landing here is forbidden and invalidates the score. Score value of turnpoints is increased by distance from the airfield, and the values of each will be clearly indicated on the map by the

number of concentric rings centred on the feature. Pilots may only score each turnpoint once during the competition.

SL/FL: The start/finish line is a line between two clearly-defined features or along a linear feature on the map close to the airfield. All pilots must pass through one of these on their outbound climb and inbound landing approaches in order to activate and then stop their flight allowance timer for all tasks. There is no score for passing through them; but Where SL/FL crossings cannot be verified, take-off and landing times recorded by GNSS shall be used, and a 20% penalty will be applied to all points scored on that flight. If there is more than one SL/FL defined, they can be used independently. For example, in any single flight, a pilot might activate their time by passing SL/FL1, but they may return through either SL/FL1, or SL/FL2, according to their personal flight plan.

In between crossing the SL and FL a pilot must fly above minimum height of 500 feet (150m) above ground level at all times unless outlanding. A 20% penalty will be applied to the total score for that flight, for each incursion below minimum height that lasts longer than 5 seconds in sequence. If the period of time below minimum height is longer than 5 minutes, the penalty is increased to 50%.

FD: A Fuel Depot point.
Marshal-controlled refuelling point. Pilots shall bring adequate spare fuel containers to provide marshals with reserves before flying each day. Performing a normal landing at these points will score the same as with turnpoints. FD points may also contain a precision landing task, if briefed. There will be a maximum of two of FD points.

NFZ: No-Fly Zone.
This may be CAA restricted airspace, or additional local restrictions. Incursions will typically incur a 50% reduction in the points scored for that flight, or more at the discretion of the director.
A pilot’s position track is continuously checked against NFZ boundaries. Entering an NFZ triggers an immediate penalty which is applied to the flight. NFZ penalties are “stacking”: multiple NFZ incursions can further reduce the flight’s total score.

Pilots must fly only with the maps provided or the CAA air map and may not use any additional navigation aids, apart from a magnetic compass, unless entering in the Discovery Class.

2. Task Catalogue

The following Navigation tasks descriptors 2.1, 2.2, and 2.3, and 2.4 provide details of the principles by which tasks will be presented on the official competition map. It should be noted that these task formats may be presented in combination with each other in any particular route given. This will be clearly indicated on the map and described in the initial competition briefing.

Tasks 2.5 and 2.6 (Economy tasks) and 2.7-2.12 (Precision tasks) will be briefed independently and part of separate task windows to the Navigation tasks.

2.1 PRECISION NAVIGATION OVER A KNOWN CIRCUIT (“SNAKE”)

Objective

To fly a prescribed course between two or more turnpoints, as closely as possible to the corridor centre line provided on the map, and without departing from the overall maximum corridor width.

Special rules

- TPs used to mark the start, legs, and end of the course do not count for scoring the pure navigation task 2.4. They have a radius of 250m.
- The corridor for the course is 250m wide and perpendicular to the given track line, such that the limits of the corridor are 125m to the left and right of the given track line. **125m is the value R** used in the scoring formulae.
- Each course has a total maximum point value (Q_{max}) which will be indicated on the map, and will be between 500 and 1000. The track line is split into a number of sample points for scoring at regular intervals of approximately 100m.
- The track line must be flown in the direction indicated on the map.
- Backtracking within the width of the corridor, or flying the course in the wrong direction, results in 50% penalty applied to the whole flight (including points scored in other tasks completed within the same flight).
- If a pilot leaves the corridor, they must re-enter it within 5 minutes in order to continue scoring that task. If the pilot re-enters the corridor at a point prior to where they left it (i.e. activates a sample point for a second time, they will only score the first crossing of that sample point.

Scoring – general explanation

This task assesses spatial precision only: how accurately a pilot can fly to a line marked on a map.

The maximum points available for the task will be defined on the competition map and be normally between 500 and 1000. This is the value Q_{max} in the scoring formula.

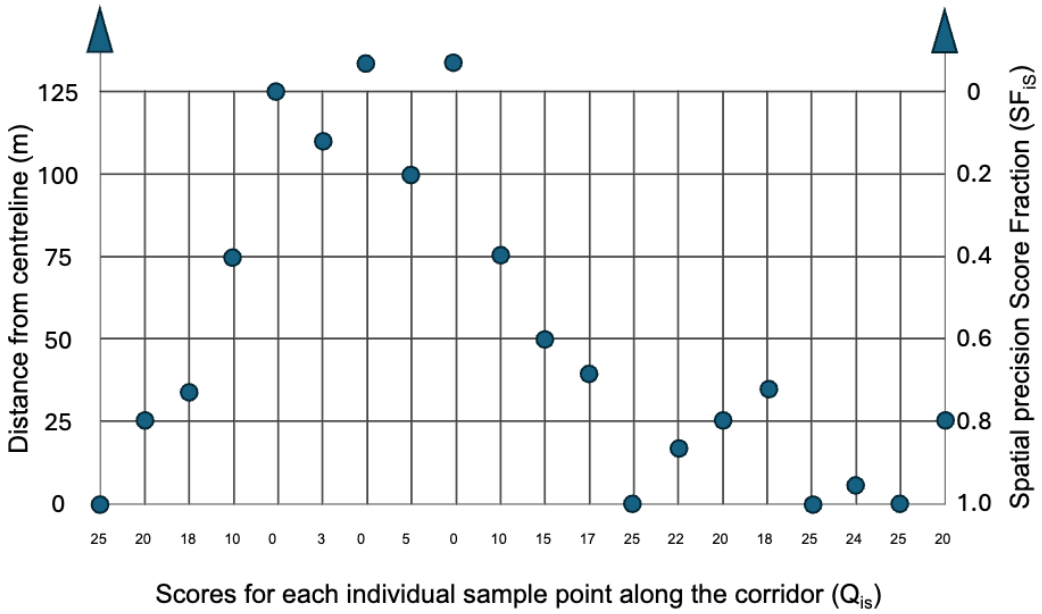
The pilot's position is assessed automatically by the Gaggle software, at “sample points” roughly every 100 metres along the track. The maximum points a pilot can score for any individual sample point on the course, are the maximum task points (Q_{max}), divided by the number of sample points (N_{leg}).

Each sample point has a radius of 125m, i.e. the left and right boundaries of the corridor within which a pilot can score any points. Where a pilot flies outside the 250m wide corridor, they’ll score zero for each of the sample points missed. To score maximum points, a pilot must be precisely on the centre line of the track at every one of the sample points.

At each sample point, the pilot’s closest position to that point is scored on a linear scale of 1 to 0. They would score 1 for being exactly on the sample point (the centre of the track line), 0.8 for 25m from the point, all the way to 0 for 125m from the point. This value is the spatial “Scoring Fraction” (SF_{is}) for that particular point. This scoring fraction is multiplied by the maximum points available for that sample point to give the pilot score for that sample point, which is defined as Q_i.

The pilot score Q for the entire task is calculated as the sum of each of individual sample point Qi scores.

Scoring – example



In this example, the task is worth up to 500 points in total (Q_{max} = 500), and there are 20 sample points (n_{leg} = 20). So the maximum score for any individual sample point is (500/20) = 25 points. The pilot distance from each sample point is shown on the vertical axis along with the corresponding spatial precision Score Fraction. The horizontal axis shows the pilot score Q_{is} score for each point. The sum total of the Q_{is} scores gives the pilot task score:

Q = 302.

Note, this is a gross simplification. In a 50km task, there could be 500 sample points.

Scoring: Mathematical Formula

Q_{max} = maximum possible score available for the course. Defined by director and indicated on the competition map. Normally between 500 and 1000 points.

n_{sp} = total number of spatial precision sample points on the course (varies automatically within the software according to length of course).

D_i = minimum distance between pilot's GPS position and the centreline location of any given sample point i as they pass it, interpolated to the next 5m increment.

R = half the corridor width (i.e. the radius of a circle centred on any one of the sample points). Fixed at 125m for this championship.

SF_{i_S}= Score Fraction for spatial precision at sample point i. For this task, this is a calculation of the ratio of pilot's position within the allowable flight corridor relative to the ideal centreline position. Returns a value between 1 and 0, with 1 being a perfect score on the centreline.

At sample point i:

Q_{i_S}= pilots spatial precision score for sample point i.

$$SF_{i_S} = \left(0, \left(1 - \frac{D_i}{R}\right)\right)$$

$$Q_{i_S} = SF_{i_s} \times \frac{Q_{Smax}}{n_{sp}}$$

Pilot task Score Q_S = the sum of the pilot's spatial score from each individual sample point along the course:

$$Q_S = \sum_{i=1}^{n_{sp}} Q_{i_S}$$

2.2 PRECISION NAVIGATION WITH ESTIMATED SPEED

Objective

To fly a prescribed course between two or more turnpoints, as closely as possible to the corridor centre line provided on the map, without departing from the overall maximum corridor width, and arriving at each turnpoint as closely as possible to an estimated time of arrival that was pre-declared before take-off.

Special rules

- TPs used to mark the start, legs, and end of the course do not count for scoring the pure navigation task 2.4. They have a radius of 250m.
- The corridor for the course is 250m wide and perpendicular to the given track line, such that the limits of the corridor are 125m to the left and right of the given track line. 125 is the value R used in the scoring formulae.
- Each course has a total maximum point value (Q_{max}) which will be indicated on the map. The track line is split into a number of n sample points for scoring the spatial precision elements, at regular intervals of approximately 100m
- The track line must be flown in the direction indicated on the map.
- Backtracking within the width of the corridor, or flying the course in the wrong direction, results in 50% penalty applied to the whole flight (including points scored in other tasks completed within the same flight).
- If a pilot leaves the corridor, they must re-enter it within 5 minutes in order to continue scoring that task. If the pilot re-enters the corridor at a point prior to where they left it (i.e. activates a sample point for a second time, they will only score the first crossing of that sample point.
- Declarations of arrival times must be submitted to the organisation before the pilot takes off on that flight. These times should be provided in total seconds time elapsed from crossing the start point of the course, to arrival at that turn point.
- The maximum timing error (E_{max}) for any specific timing point is **50 seconds**. If a pilot fails to cross a timing point, E_{max} is applied.

Scoring – general explanation

This task assesses not only spatial precision (as per 2.1) but also timing precision: the ability of a pilot to cross a specific turn point at exactly the number of seconds after leaving the start point, that they have pre-declared before they took off.

The spatial precision element is included order to prevent pilots simply declaring very slow times, and then zig-zagging off course to kill time before they arrive. Pilots are still expected to accurately follow the line marked on the map between timing points, so are limited to the standard 250m wide corridor used in all the precision navigation tasks in this catalogue.

The maximum points available for the task will be defined on the competition map and be normally between 500 and 1000. This is the value referred to as Q_{max} in the scoring formula.

Of the total Q_{max} points available in the task, 20% are assigned to spatial precision, and 80% are assigned to timing precision. So if 500 points in total are assigned to the task, 100 of these will be for spatial precision, and 400 for timing precision.

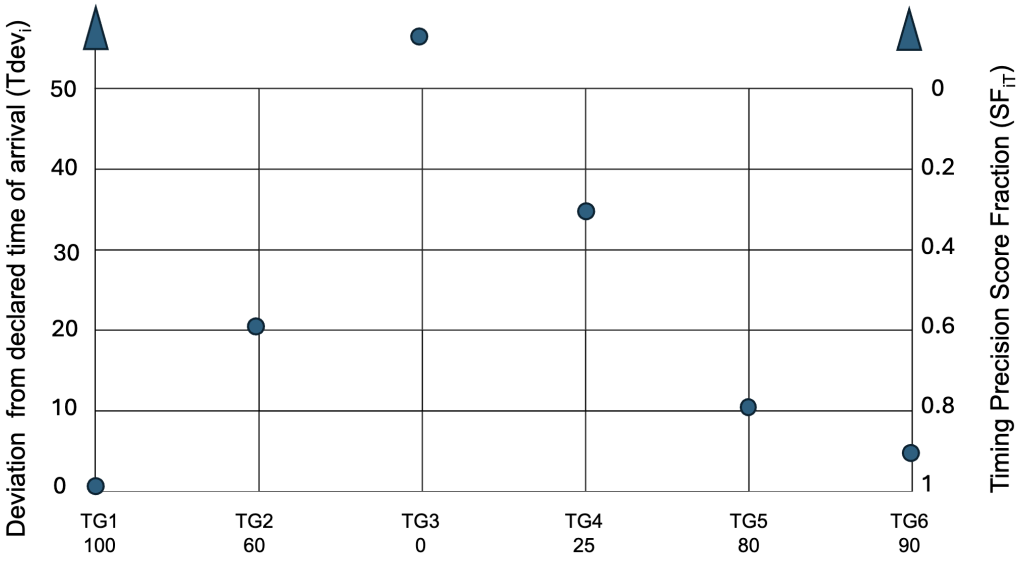
The spatial precision points are scored by Gaggle software in exactly the same manner as described in task 2.1. But they are proportionally devalued to be worth only 20% of Q_{max}. To score maximum points for the spatial precision element, a pilot must be precisely on the centre line of the track at every one of the sample points.

The timing precision points are scored by comparing the crossing time of each timing point against the pilot's pre-declaration. This gives a time deviation value (in seconds) for each timing point ($Tdev_i$). If a pilot is 5 seconds early, the deviation value is 5. If they are 20 seconds late, the deviation value is 20. The maximum deviation possible on each timing point is 50 seconds, so if pilot arrives more than one minute early or late for the timing point, they will register a maximum deviation value of 50 and no more.

If the time variance is 0, the timing score fraction (SF_{it}) for that timing point will be 1. If the time variance is 50s or greater, the timing score fraction will be 0. The score for each point will vary from 1 to 0 in proportion to the variance from 0 to 50s. This scoring fraction is multiplied by the maximum points available for that timing point to give the pilot score for that sample point, which is defined as Q_{iT}.

The pilot timing score Q_T for the entire task is calculated as the sum of each of individual timing point Q_{iT} scores.

Scoring – example



Scores for each individual timing point along the corridor (Qi_T)

In this example, the task is worth up to 750 points in total (Q_{max} = 750), then 80% of these are assigned to the timing precision (Q_{Tmax} = 600 points). There are 6 timing points (n_{tp} = 6). So the maximum score for any individual sample point is (600/6) = 100 points. The pilot time deviation from their declaration on each sample point is shown on the vertical axis along with the corresponding timing precision Score Fraction. The horizontal axis shows the pilot score Q_{iT} score for each point. The sum total of the Q_{iT} scores gives the pilot task score:

$$Q_T = 312.$$

Scoring – mathematical formula

Q_{max} = maximum possible score available for the course. Defined by director and indicated on the competition map. Normally between 500 and 1000 points.

Q_{Smax} = maximum score available for spatial precision = 0.2 x Q_{max}

Q_{Tmax} = maximum score available for timing precision = 0.8 x Q_{max}

Spatial precision

n_{sp} = total number of spatial precision sample points on the course (varies automatically within the software according to length of course).

D_i = minimum distance between pilot's GPS position and the centreline location of any given sample point i as they pass it.

R = half the corridor width (i.e. the radius of a circle centred on any one of the sample points). Fixed at 125m for this championship.

SF_{i_S} = Score Fraction for spatial precision at sample point i. For this task, this is a calculation of the ratio of pilot's position within the allowable flight corridor relative to the ideal centreline position. Returns a value between 1 and 0, with 1 being a perfect score on the centreline.

At sample point i:

Q_{i_S} = pilots spatial precision score for sample point i.

$$SF_{i_S} = \left(0, \left(1 - \frac{D_i}{R}\right)\right)$$

$$Q_{i_S} = SF_{i_s} \times \frac{Q_{Smax}}{n_{sp}}$$

Spatial Precision Score Q_S = the sum of the pilot's spatial score from each individual sample point along the course:

$$Q_S = \sum_{i=1}^{n_{sp}} Q_{i_S}$$

Time precision

N_{tp} = total number of timing points on the course for declaration in advance.

At timing point i:

Td_i = pilots declared time of arrival at timing point i (in seconds from crossing start of course)

Ti = pilots actual time of arrival at timing point i (in seconds from crossing start of course), as recorded on the GPS track.

$Tdev_{max}$ = maximum allowed deviation from the declared time of arrival in order to register a score at any given timing point. This is a value set at 50 seconds for this championship.

$Tdev_i$ = the deviation between the declared time of arrival at timing point j, and the actual time of arrival. This is an absolute value (i.e. always non-negative).

$$Tdev_i = |Td_i - T_i|$$

SF_{i_T} = Score Fraction for timing precision at sample point i. This is the ratio of pilot's time deviation from their declared arrival time, to the maximum allowable deviation $Tdev_{max}$,. Returns a value between 1 and 0, with 1 being a perfect score exactly on their declaration, and 0 being either early or late by 60 seconds or more. The max function ensures that any deviation higher than $Tdev_{max}$ returns a score of 0.

At sample point i:

$$SF_{i_T} = \left(0, \left(1 - \frac{Tdev_i}{Tdev_{max}}\right)\right)$$

Q_{i_T}= pilot's score for individual timing point i:

$$Q_{i_T} = SF_{i_T} \times \frac{Q_{Tmax}}{n_{tp}}$$

Time precision score Q_T: This is the sum of all timing point scores in the task:

$$Q_T = \sum_{i=1}^{n_{tp}} Q_{i_T}$$

Pilot task score Q: This is the sum of the spatial precision score and the timing precision scores

$$Q = Q_S + Q_T$$

2.3 PRECISION NAVIGATION WITH CONSTANT SPEED

Objective

To fly a prescribed course between two or more turnpoints, maintaining constant ground speed for the duration each leg of the course.

If the pilot ground speed is exactly constant throughout each individual leg of the course, they will score top points. If the speed is inconsistent, they will lose points. No points are scored when the pilot speed differs from the average by more or less than 5km/h.

Special rules

- TPs used to mark the start and end of each leg do not count for scoring the pure navigation task 2.4. They have a radius of 250m
- The track line between turnpoints making up each leg may be comprised of straight or curved elements.
- The spatial corridor for the course is 250m wide and perpendicular to the given track line, such that the limits of the corridor are 125m to the left and right of the given track line. If the pilot is outside of this when scoring sample points are taken, they cannot score for that sample.
- The maximum allowed deviation from the calculated average ground speed within any individual leg of the course is set at 5km/h.
- Each course has a total maximum point value (Q_{max}) which will be indicated on the map. The track line is split into sample points for scoring at regular intervals of approximately 100m.
- The track line must be flown in the direction indicated on the map.
- Backtracking within the width of the corridor, or flying the course in the wrong direction, results in 50% penalty applied to the whole flight (including points scored in other tasks complete within the same flight).
- If a pilot leaves the corridor, they must re-enter it within 5 minutes in order to continue scoring that task. If the pilot re-enters the corridor at a point prior to where they left it (i.e. activates a sample point for a second time, they will only score the first crossing of that sample point.

Scoring – general explanation

This task assesses speed precision: the ability of a pilot to maintain a constant ground speed throughout the length of a leg. Indirectly, it also assesses spatial precision, in that a pilot must be inside the task corridor in order to register on the sample timing points for the task.

The maximum points available for the task will be defined on the competition map and be normally between 500 and 1000. This is the value referred to as Q_{max} in the scoring formula.

The pilot's ground speed is assessed automatically by the Gaggle software, at “sample points” roughly every 100 metres along the track. To score maximum points, a pilot must fly at an entirely constant ground speed along the length of each leg of the course. The constant speed that is being checked applies to each leg individually, so the speed on leg 1 does not need to be the same as that flown on leg 2, leg 3, etc.

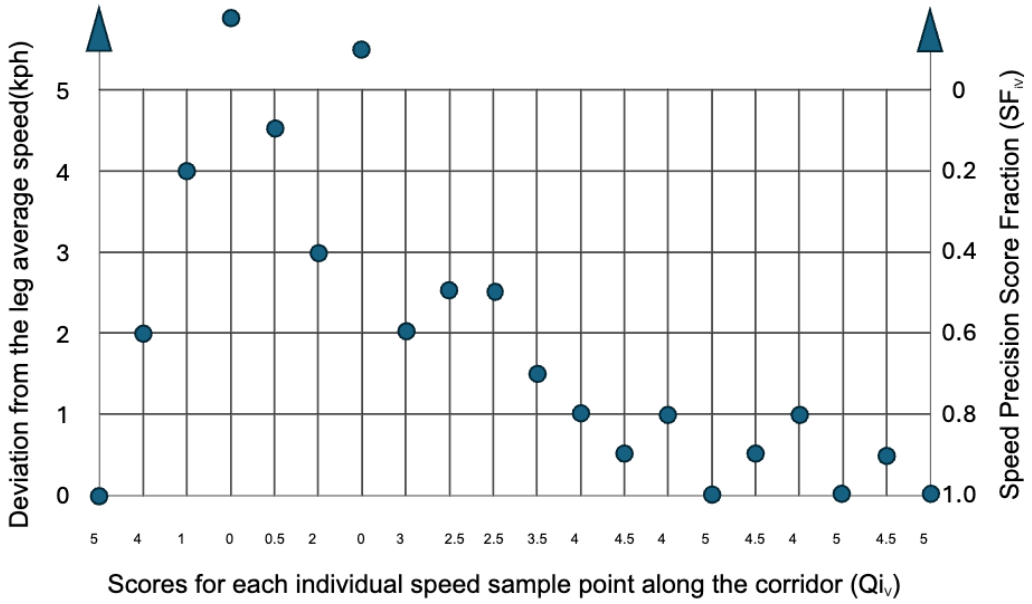
The average ground speed for each leg is calculated by Gaggle as the pilot reaches the turnpoint that defines the end of the leg. The pilot’s ground speed at each sample point along that leg is then compared with the average speed and a score calculated based on the amount by which the sample point speed deviates from the average.

If the speed deviation is 0, the score for that sample point will be 1. If the speed deviation is 5kph or greater, the score will be 0. The score fraction for each point will vary from 1 to 0 in

proportion to the deviation from 0 to 5kph from the calculated average. This scoring fraction is multiplied by the maximum points available for that sample point to give the pilot speed score for that sample point, which is defined as Qi_V.

The pilot score Qj for each leg of the task is calculated as the sum of each of individual speed sample point Qi_V scores. The overall task score Q is the sum of each leg score.

Scoring – example



In this example, one leg is shown of a 5 leg course. There are 100 points available for this leg ($Qleg_j = 100$). There are 20 sample points on the leg ($n_{legj} = 20$). So the maximum score for any individual sample point is (100/20) = 5 points. The pilot time deviation from their calculated average for the leg on each sample point is shown on the vertical axis along with the corresponding Speed Score Fraction. The horizontal axis shows the pilot score Q_{iV} score for each point. The sum total of the Q_{iV} scores gives the pilot score for that leg:

$$Q_J = 63.5.$$

Scoring – mathematical formula

$Qleg_j$= maximum possible score available for each leg of course.

n = total number of separate scoring legs in the course.

Q_{max} = maximum possible score available for the course. Normally between 500 and 1000 points and will be communicated to pilots on the map.

$$Q_{max} = \sum_{j=1}^{n} Qleg_j$$

D_i = minimum distance between pilot's GPS position and the centreline location of any given sample point i as they pass it.

R = half the corridor width (i.e. the radius of a circle centred on any one of the sample points).

Sample points only register to score on this task if $D_i < R$ (i.e. the pilot is inside the scoring corridor).

$Vdev_{max}$ = the maximum allowed deviation from the average leg speed in order to register a score at any given sample point. This is a value set at 5km/h for this championship.

For any given leg j of the course (defined by turnpoints):

$nleg_j$ = the number of sample points in any given leg j.

V_i = pilot speed recorded from GPS log at any given sample point i

$Vsum_j$ = the sum of all speed samples within leg j

$$Vsum_j = \sum_{i=1}^{nlegj} V_i$$

VGj = Global average ground speed of the pilot along the leg j

$$VG_j = \frac{Vsum_j}{Nleg_j}$$

At sample point i:

$Vdev_i$ = the deviation between the global average ground speed for the leg VG_j (i.e. the speed that the pilot *should* be travelling at if their speed is absolutely constant throughout the leg) and the local ground speed of the pilot V_i as they pass through sample point i. This is an absolute value (i.e. always non-negative).

$$Vdev_i = \left|VG_j - V_i\right|$$

SF_{iv} = Score Fraction for speed precision at sample point i. For this task, this is a calculation of the ratio of pilot's deviation $Vdev_i$, to maximum allowable deviation $Vdev_{max}$. Returns a value between 1 and 0, with 1 reflecting a perfect performance (i.e. the sampled speed is exactly the same as the average speed).

$$SF_{i_V} = \left(0, \left(1 - \frac{Vdev_i}{Vdev_{max}}\right)\right)$$

Q_{iV} = pilot's speed precision score for individual sample point i:

$$Q_{i_V} = SF_{i_V} \times \frac{Qleg_j}{nleg_j}$$

Q_j = Pilot score for leg j. This is the sum of all sample scores in that leg:

$$Q_j = \sum_{i=1}^{nleg_j} Q_{i_V}$$

Pilot Task Score Q: This is the sum of all leg scores in the task:

$$Q = \sum_{j=1}^{n} Q_j$$

2.4 PURE NAVIGATION

Objective

To fly a course of the pilot's choice between as many turnpoints or markers as possible within a given maximum time window.

This task is intended to allow pilots to gain bonus points en route to and from the other navigation tasks in this catalogue.

Special rules

- This task runs as a single continuous task throughout the period of the competition.
- Daily task window of available flight time to be specified by the director and briefed. Barring adverse weather conditions, this is normally expected to be between 07:00 and 20:00.
- Daily maximum number of pilot airtime hours to be specified by the Director and briefed. This will not exceed five hours, for safety reasons. No single navigation flying window will exceed 4 hours.
- All turnpoints shown on the maps provided to competitors are valid for this task, unless otherwise briefed. Points that are used to define other precision routes on the task map are not valid for this task.
- According to the briefing, pilots may be required to pass a particular start and finish gate to activate the task.
- This task may be de-activated during other specific tasks in the competition such as economy tasks, according to the briefing.
- Each TP passed correctly in the air for the first time will score its full weighted point value. Subsequent passes of that turnpoint, at any time during the remainder of the competition flying days, will not score any points. But neither will they be penalised if crossed inadvertently whilst transiting towards other tasks.
- Penalty for exceeding maximum defined airtime or task window: 50 points per minute over allowed time.
- Penalty for returning to the airfield by any means other than flight (i.e. outlanding): 50% of the total points scored on that flight up to the point of landing during that flight. For these purposes, a "flight" is considered to be an outward and return journey starting and finishing at the base airfield (i.e. landing at a fuel depot does not start a new "flight"). This penalty is applied to points scored on all navigation tasks (2.1, 2.2, and 2.3 and 2.4) attempted during the same flight.
- If penalties are applied, reducing a turnpoint score by 50%, the pilot may remove that penalty by recrossing that turnpoint in a subsequent flight to score the full value of that turnpoint.

Scoring

Turn point score weightings will vary between 10 and 30 points according to their distance from the Airfield. These will be clearly indicated on the published maps.

Each TP passed correctly in the air for the first time will score its full point value. Subsequent passes of that turnpoint will not score any points, but neither will they be penalised if crossed inadvertently whilst en-route towards other tasks.

If any pilot successfully collects all turnpoints on the competition map during the period of the competition, the board 'resets' and the pilot may continue to score turnpoints for a second time, with all turnpoint values set to 10 points for that pilot from that point onwards.

N10 = Number of 10-value turnpoints correctly crossed for the first time by the pilot

N20 = Number of 20-value turnpoints correctly crossed for the first time by the pilot

N30 = Number of 30-value turnpoints correctly crossed for the first time by the pilot

Pilot task score Q:

Q = (10 * N10) + (20 * N20) + (30 * N30)

2.5 ECONOMY & DISTANCE – CLOSED CIRCUIT WITH 3 LEGS

Objective

To take off from the deck with a limited amount of fuel by weight and fly a triangular course of pilot's choice, maximising distance covered, and returning to land within the airfield. If possible, this task will be set to specifically emulate an FAI record category and it may be possible for pilots to set world records if conditions allow.

Special rules

- All three legs of the chosen triangle must conform to the FAI definition of a closed circuit with 3 legs: to be between 28% and 38% of the total length.
- The length of a closed circuit shall be measured as the sum of the geodesics joining the start point with the finish point, via the turnpoints in the order flown by the aircraft. (S10 3.8.5)
- A turn point is reached when the FR trace is observed to pass through a quadrant (90°degree sector) on the ground with its apex at the turn point and orientated symmetrically to and remote from the two legs of the course which meet at the turn point. (S10 3.8.7)
- Pilots must land within 800m of their takeoff point (i.e. inside the airfield, or crossing a start/finish line as briefed) to validate the closure of the triangle
- Pilots will have fuel measured by weight before take-off.
- Fuel tanks will be sealed by marshals before take-off, and checked again on landing.
- Normally precision landing tasks (2.6 and 2.7) will not be included when this task is set to avoid the risk of pilots burning fuel whilst stacking for a landing approach.
- When this task is set, all other navigation tasks (i.e. 2.1, 2.2, 2.3 and 2.4) are deactivated for the period of this task.
- According to the briefing, pilots may be required to pass a particular start and finish gate to activate the task.
- This is the only task for which pilots may, if it is defined in the briefing, be allowed to carry GPS navigational aids. This is to enable, if conditions allow, longer distances to be covered that take pilots beyond the limits of the standard competition map.

Scoring

Pilot task score Q:

$$Q = N \times \frac{D_p}{Dmax}$$

Where:

N = A multiplier to be defined at the briefing. The maximum score for the task will vary between 1000 and 2000 points, and will be set by the director based on the balance of

points available from other task types according to the amount of flying enabled by weather. This value will be announced in the briefing before the task.

Dp = The pilot's distance calculated by the straight line distance between the centres of the three turnpoints used

Dmax = The maximum distance covered by any pilot in the class

The outcome of the calculation will be rounded to the nearest whole number.

Penalty for exceeding maximum defined airtime or task window: 50 points per minute over allowed time.

Penalty for breaking the seal on fuel tanks outside of marshal supervision: 100%

Penalty for returning to the airfield by any means other than flight (i.e. outlanding): 75% of the points scored up to the point of landing during this task only.

Penalty for completing a 'flat triangle' (i.e. one that is closed by returning to airfield but does not meet the FAI triangle requirements for all legs to be between 28% and 38% of total length): 50% applied to Dp value.

Penalty for not completing a closed triangle (i.e.straight line distance): 75% applied to the Dp value.

2.6 PURE ECONOMY

Objective

Take off with a measured quantity of fuel and remain airborne for as long as possible before returning to the landing deck.

Special rules

- Pilots will fly with limited fuel, measured by weight before take-off.
- Fuel tanks will be sealed by marshals before take-off, and checked again on landing.
- Normally precision landing tasks (2.6 and 2.7) will not be included when this task is set to avoid the risk of pilots burning fuel whilst stacking for a landing approach.
- When this task is set, all other navigation tasks (i.e. 2.1, 2.2, 2.3 and 2.4) are deactivated for the period of this task.
- According to the briefing, pilots may be required to pass a particular start and finish gate to activate the task.

Scoring

Pilot task score Q:

$$Q = N \times \frac{T_p}{Tmax}$$

Where:

N = A multiplier to be defined at the briefing. The maximum score for the task will vary between 1000 and 2000 points, and will be set by the director based on the balance of points available from other task types according to the amount of flying enabled by weather. This value will be announced in the briefing before the task.

Tp = The pilot's time, after penalties for landing out are applied (if applicable).

Tmax = The longest airtime of any pilot in the task, after time penalties for landing out are applied (if applicable).

The outcome of the calculation will be rounded to the nearest whole number.

Penalty for exceeding maximum defined airtime or task window: no specific penalty, but all pilot times Tp are only counted up to the defined limit.

Penalty for breaking the seal on fuel tanks outside of marshal supervision: 100%

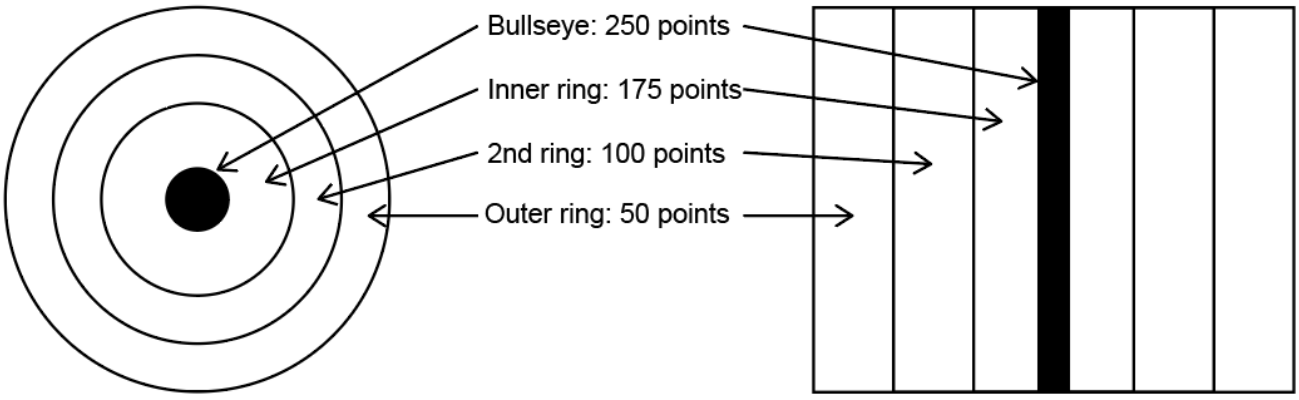
Penalty for returning to the airfield by any means other than flight (i.e. outlanding): 75% of the points scored up to the point of landing during this task only.

2.7 SPOT LANDING

Objective

To land with engine off as near as possible to a target.

Description



On approach, the pilot should circle the field at minimum 500ft (150m) to indicate to marshals that they are intending to attempt the task. If there are other pilots ahead of them in the queue, they should stack in a circuit above them, over a designated field to the side of the target. Circuit locations will be briefed in advance.

When given a green flag by marshals, they should pass at least 500ft directly overhead the target, cut the engine and try to make a first touch as near as possible to the centre of a target consisting of:

- A series of concentric circles for PF1 class.
- A series of 5m wide parallel strips for PL1 class (for simplicity in scoring, also referred to as “rings”)

Special rules

- The specific diameters of the rings will be given at the briefing. The outer ring will be no larger than 6.5m in diameter.
- 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.

- For PF classes, the only part of the paramotor that may touch the ground before the wing, is the speedbar and/or throttle. Any other part of the aircraft touching the ground constitutes a bad landing.
- If a pilot runs out of fuel whilst in a queue for the task, they will be permitted to refuel and attempt the task again.

Scoring

Bullseye: 250 points

Inner ring: 175 points

Second ring: 100 points

Outer ring: 50 points

Outside outer ring: 0 landing score.

Penalties

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

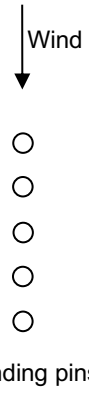
Flying less than 45 seconds with no engine: zero landing score.

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

2.8 BOWLING LANDING

Objective

Land with the engine off, hitting as many pins as possible.



Landing pins

Description

This task may be located at the airfield, or at one or more of the FD fuel depot points, as briefed. The location will be briefed in advance.

Five or more pins are placed along a line into wind in the landing area at regular intervals between 1 and 2 m. The pins are 50 cm high for PF classes and 100 cm high for PL classes and they are covered by dense foam. Pins will be simply standing on the ground. A pin is said to be hit when it is knocked down.

On approach, the pilot should circle the field at minimum 500ft to indicate to marshals that they are intending to attempt the task. If there are other pilots ahead of them in the queue, they should stack above them, over a field to the side of the target. Circuit locations will be briefed in advance.

When given a green flag by marshals, they should pass at least 500ft directly overhead the target, and cut the engine.

They will fly a minimum of 45 seconds and will try to hit as many pins as possible before touching the ground. Each pin knocked down before touching the ground is scored as a successful hit.

Special rules

- A pilot may only attempt each available landing task once per day of flying. They may still land normally in FD points for fuel or rest breaks.
- 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. Any further pins hit after this point will not score.
- For PF classes, the only part of the paramotor that may touch the ground before the wing, is the speedbar and/or throttle. Any other part of the aircraft touching the ground constitutes a bad landing.
- If a pilot runs out of fuel whilst in a queue for the task, they will be permitted to refuel and attempt the task again.

Scoring

Each pin hit successfully is worth 50 points.

Penalties

Not overflying the target or crossing it with engine on: zero landing score.

Flying less than 45 seconds with no engine: zero landing score.

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

For PF classes: Any part of the aircraft except for the throttle and/or speedbar touching the ground prior to the wing constitutes a bad landing.

2.9 PRECISION WING CONTROL (PF classes only)

Objective

Land and display precise control of the wing before taking off again.

Description

This task will normally be flown in wind conditions in which a reverse launch is possible. A straight course consisting of two sticks is laid out facing approximately into wind. The precise distance between the sticks is arbitrary but they should be a minimum of 100m apart. The pilot enters the course into wind. They must kick the first stick to start their time. They must then land in between the two sticks, bringing the wing down such that the trailing edge is clearly seen to touch the ground.

When a marshal has confirmed that wing has touched the ground they will show a green flag as a signal that the pilot may take off again.

The pilot will then launch and kick the second stick to stop the timer.

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.
- The clock starts the moment the pilot kicks the first stick and stops the moment he kicks the second stick.
- The pilot may have three attempts at kicking each stick.
- If the pilot relaunches the wing before being shown a green flag by the marshal they will incur 100% penalty for the task.
- If a launch fails, the pilot may make as many attempts as they need to relaunch the wing within the specified time limit.
- The maximum time allowed for a pilot to complete the course is 3 minutes.

Scoring

Pilot task score Q:

$$Q = N \times \frac{T_{min}}{Tp}$$

Where:

N = A multiplier to be defined at the briefing. The maximum score for the task will vary between 500 and 1000 points, and will be set by the director based on the balance of points available from other task types according to the amount of flying enabled by weather. This value will be announced in the briefing before the task.

Tp = The pilot's recorded time,

Tmin = The shortest pilot time taken to complete the task

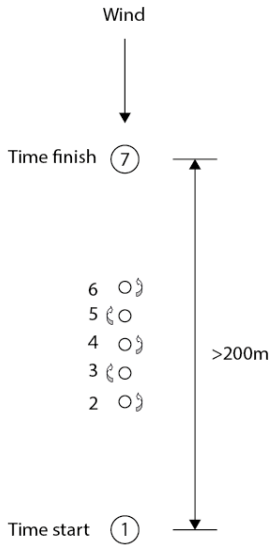
The outcome of the calculation will be rounded to the nearest whole number.

2.10 PRECISION WING CONTROL – GROUND HANDLING (PF classes only)

Objective

Land and display precise control of the wing before taking off again.

Description



A straight course consisting of two sticks is laid out facing approximately into wind. The precise distance between the sticks is arbitrary but they should be a minimum of 200m apart.

At the centre point between the sticks a minimum of five pins are placed in line with the sticks. The pins are small plastic cones of the type used in sports training. The task director will specify the distance between each pin at the briefing

The pilot enters the course into wind. They must kick the first stick to start their time. They must then land before the first pin, keeping the wing flying in the air above them.

While kiting the wing, they should walk or run through the course of pins, turning in alternate directions around each one to follow a slalom course. The body of the pilot must be clearly observed to pass outside of the line of pins when making each turn, and they must not touch any of the

pins. After the pilots has passed the final pin, they will then launch as quickly as possible and kick the second stick to stop the timer.

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. - The clock starts the moment the pilot kicks the first stick and stops the moment he kicks the second stick.
- The pilot may have three attempts at kicking each stick.
- The pilot may turn either to the left or to the right when rounding the first of the pins, so long as they alternate the turn direction on each subsequent pin. - If the wing drops to the ground whilst the pilot is running through the slalom course they may relaunch it as many times as they need within the specified time limit.
- The maximum time allowed for a pilot to complete the course is 3 minutes
- Each pin that is touched by the body of the pilot in the course counts as a missed target.
- Each time the pilot fails to turn outside the line of pins it counts as a missed target.

Scoring

Pilot task score Q:

$$Q = N \times \frac{T_{min}}{Tpen}$$

Where:

N = A multiplier to be defined at the briefing. The maximum score will vary between 500 and 1000 points, and will be set by the director based on the balance of points available from other task types according to the amount of flying enabled by weather. This value will be announced in the briefing before the task.

Tmin = The shortest pilot time taken to complete the task (after penalties for missed targets)
Tp = The pilots recorded time in the course
M = the number of missed targets
Vpen = the time penalty for each missed target (seconds)
Tpen = The pilots time (after penalties for missed targets) = Tp + M * Vpen

The outcome of the calculation will be rounded to the nearest whole number.

2.11 THE WALL

Objective

To make a controlled, safe landing within a specific corridor and as close as possible to a scoring line ("the Wall").

Description

A clearly marked corridor, aligned approximately into wind, and a "wall" will be established.

On approach, the pilot should circle the field at minimum 500ft (150m) to indicate to marshals that they are intending to attempt the task. If there are other pilots ahead of them in the

queue, they should stack in a circuit above them, over a designated field to the side of the target. Circuit locations will be briefed in advance.

When given a green flag by marshals, they should pass at least 500ft directly overhead the target, cut the engine and try to land, and come to a complete standstill, within the corridor, and as near as possible to the wall, without allowing any part of their body or paramotor to touch or pass beyond it.

Special Rules

- The circuit to be flown will be detailed at briefing.
- ~~The nearest point to the wall of the nearest of the pilot's feet (PF) or the aircraft wheels (PL), when at standstill after landing is completed, is the point from which the pilot's score will be derived.~~
- The first touch of either the pilot's feet (PF) or the aircraft's wheels (PL), as judged by the marshals, will be the point from which the distance to the wall will be measured.
- For PF classes, the only part of the paramotor that may touch the ground before the wing, is the speedbar and/or throttle. Any other part of the aircraft touching the ground constitutes a bad landing.
- If a pilot runs out of fuel whilst in a queue for the task, they will be permitted to refuel and attempt the task again.

Scoring

Pilot task score Q:

$$Q = N \times \frac{D_{min}}{Dp}$$

Where:

N = A multiplier to be defined at the briefing. The maximum score will vary between 250 and 500 points, and will be set by the director based on the balance of points available from other task types according to the amount of flying enabled by weather. This value will be announced in the briefing before the task.

Dmin = The shortest pilot distance from the wall achieved in the task
Dp = The pilot's recorded distance from the wall

Penalties

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

Flying less than 45 seconds with no engine: zero landing score.

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

Any part of pilot body or paramotor aircraft (excluding wing) touching or crossing over the scoring line ("wall"): zero landing score

2.12 PRECISION TAKE OFF SIDE-QUEST

Objective

To make a clean take-off from the deck at the first attempt.

Description

This task is a bonus for which pilots may opt in, when precision tasks 2.7, 2.8, 2.9, 2.10, and 2.11 are set. Pilots will be briefed by the director on the means by which they should indicate their participation to marshals. Pilots will set up and take off (in the order if ordered take off is briefed). If the pilot has opted in to this bonus, and they achieve a successful take off for the main precision task on the first attempt, the bonus points available will be added to their score for the precision task. If the pilot fails the first take off attempt, they may still set up again and attempt the precision task, and the same number of available points will be deducted from any points they score in that task.

Special Rules

Pilot must declare to a marshal, prior to take off, that they want to participate in this side-quest for the particular task in hand.

One attempt only is permitted for purposes of scoring this bonus side-quest.

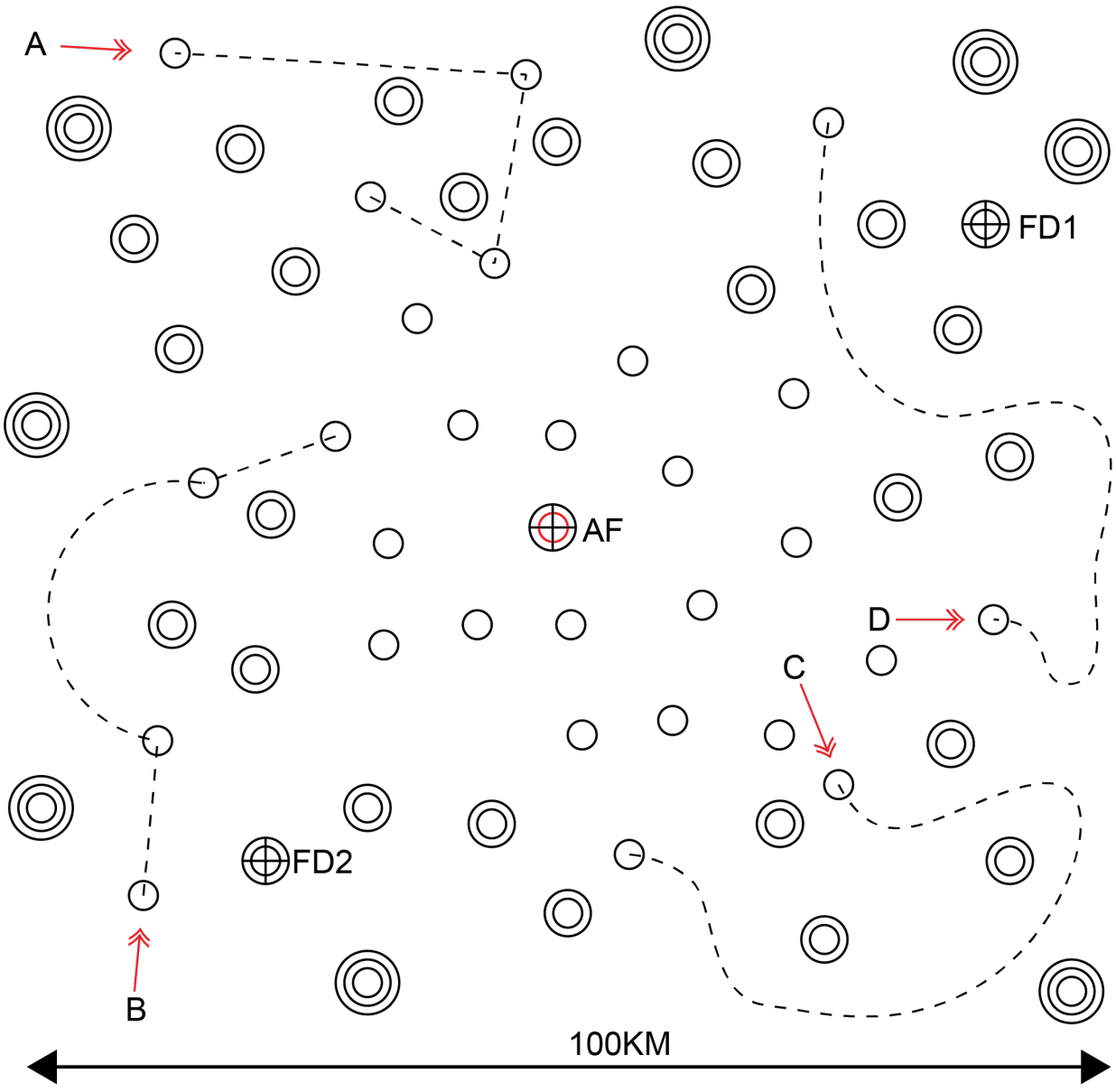
Scoring

Successful take off on first attempt: 50 points added to main task score.

Unsuccessful take off on first attempt: 50 points deducted from any points scored in that precision task.

Minimum score for precision tasks is 0 (i.e. a pilot who declares participation and fails first take off attempt in side-quest cannot result in a negative score).

3. Example Competition Maps and Information for Pilots



FEATURE	NOTES	POINTS VALUE
○	TP – Standard Turnpoint	No. of rings indicates value of points for first crossing in the air. i.e. One ring = 10 point, Two rings = 20 points, Three rings = 30 points No points scored for each second crossing of the same point during the competitions (no penalty either)
⊕	FD – Fuel Depot	20 points for first landing 10 points for each further landing
⊕ AF	AF - Airfield	No points for flying through or performing normal landing. Pilots must conclude each competition day by flying back to Airfield to complete the day's task or accept 50% penalty on all points accrued during that flight.

A →- - -	Route A. Task 2.2 Precision Navigation with estimated speed	Pilot must submit pre-declaration of 3 times of arrival at each of the 3 timing points, before taking off on the flight. Submitted times should each be provided in seconds from start point of the course. Route may only be flown once in the competition per pilot
B →- - -	Route B. Task 2.3 Precision Navigation with constant speed	There are 3 legs on this course, so three different average ground speed values will be used. Route may only be flown once in the competition per pilot
C →- - -	Route C. Task 2.2 Precision Navigation over a known circuit	Sample points for navigation accuracy are placed approximately every 100m throughout the course. Pilot will only score these if they are within a 125m radius of each point. Route may only be flown once in the competition per pilot
D →- - -	Route D. Task 2.2 Precision Navigation over a known circuit	Sample points for navigation accuracy are placed approximately every 100m throughout the course. Pilot will only score these if they are within a 125m radius of each point. Route may only be flown once in the competition per pilot

3.1 MAP AREA EXAMPLE WITH DOWNWIND OUTLANDING

An external outlanding with a downwind precision navigation may be defined in the event of strong wind conditions.