RULES OF COMPETITION

FOR HUMAN POWERED FLIGHT

VERSION 1.2

Contents

A Introduction

A 1. These rules are intended primarily for us at the BHPFC annual Icarus cup however may be used to govern any human powered flying competition.

B Competition ranking

B 1. Competition tasks are as follows;

- B 1.1. Duration
- B 1.2. 200m time trial
- B 1.3. 1km time trial
- B 1.4. 500m slalom course
- B 1.5. Distance around a triangular course
- B 1.6. Unassisted take-off performance
- B 1.7. Landing accuracy
- B 1.8. Take-off from grass
- B 1.9. 200m time trial with take-off from grass

B 2. At the competition director's discretion, a course distance may be reduced to fit the airfield by up to 30% prior to any team attempting such task.

- B 2.1. This must be announced at a briefing prior to taking effect.

B 3. All tasks shall be scored in accordance with section H - Competition scoring.

B 4. Pilot competition;

- B 4.1. For each task, only the pilot's best score will be awarded.
- B 4.2. Pilots will be ranked according to their cumulative score across all tasks.

B 5. Aircraft competition;

- B 5.1. For each task, only the aircraft's best score will be awarded, regardless of how many pilots complete the task
- B 5.2. Aircraft will be ranked according to their cumulative score across all events.

C Additional prizes

C 1. Additional prizes may be available during the event but do not contribute to competition scoring. For example;

- C 1.1. Jacobson Figure of Eight
- C 1.2. Best new design and construction (innovation award)

D Aircraft

D 1. The competition is open to aircraft which are solely human powered by the pilot.

- D 1.1. As such, the following are not permitted;
  - D 1.1.1 Energy storage except for powering avionics and controls.

D 1.1.2 Lighter than air devices.

D 1.1.3 Towing, winching or kite assistance.

D 1.1.4 Control of the aircraft by persons other than the pilot(s).

D 1.2. However, the following are permitted

D 1.2.1 Auto stabilization.

D 1.2.2 An autopilot which can be overridden and turned on or off by the pilot.

D 2. At each event, the aircraft must have been flight tested before any competition task is attempted.

D 3. The aircraft cockpit must be free of unprotected sharp protrusions which may cause harm.

D 3.1. Where the pilot is not enclosed, the cockpit is considered to be anywhere within reach of the pilot during operation.

D 4. The aircraft cockpit must be free of anything which may reasonably trap or crush any part or the pilot.

D 5. Aircraft with an enclosed cockpit must be fitted with a suitable brake.

E Pilot

E 1. All pilots must wear a protective helmet while operating the aircraft

E 1.1. Helmets must be CE marked or otherwise compliant to EN 1078.

E 2. All pilots must carry third party insurance.

E 2.1. Insurance is available from the BHPA.

E 3. Before any flying is attempted by a pilot, at a given event, the pilot must have;

E 3.1. Provided proof of valid insurance to an official,

E 3.2. Agreed to abide by all rules and regulations set out by the competition director(s).

E 4. Before each task is attempted, the pilot must

E 4.1. have relevant flying experience for the task(s) being attempted,

E 4.2. be satisfied that the aircraft is serviceable and fit to fly, and

E 4.3. complete a full, free and correct sense controls check of all aircraft controls.

F Team

F 1. Each team must elect a team leader.

F 1.1. The team leader is ultimately responsible for ensuring that their team complies with all rules and site regulations at all times.

F 1.2. The team leader shall submit a risk assessment upon entry.

F 2. It is strongly recommended that at least one team member carries a current first aid qualification.

F 3. The maximum number of team members permitted on the airfield at any time is eight.

F 3.1. Pilots are considered team members.

F 3.2. Additional team members may only be allowed airside for the purposes of marshalling or in the interests of safety,

F 3.3. Otherwise all additional team members must remain groundside.

G Operations

G 1. "Operations" are considered to be any movement of aircraft, vehicles or persons across the airfield.

G 2. Operations may be suspended at any time at the competition director's discretions.

G 2.1. This may be due to weather, airborne or ground traffic, or otherwise.

G 3. Aircraft must not fly more than 15m (approx. 50ft) above ground level.

G 4. Aircraft must not intentionally fly more than 12m (approx. 40ft) above ground level.

G 5. All team members must follow the instructions of a marshal unless it is unsafe to do so.

G 6. If any safety concerns arise, all operations must be immediately stopped until such concerns are resolved.

H Competition scoring

H 1. The judge's decisions regarding scoring are final.

H 1.1. Judges may change their decision in light of conclusive evidence.

H 1.1.1 Evidence must be submitted within 24 hours of the task being completed.

H 2. Setting of tasks is at the discretion of the competition director and can be any selection, order or at any time, according to the weather, aircraft available, pilot experience etc.

H 3. No points are awarded unless the aircraft is serviceable after the task. If there is any doubt, a take-off and landing shall be demonstrated within one hour.

H 4. Each competitor must start within five minutes of declaring they are ready to start, otherwise they must go to the back of the launch queue. Any aircraft may request for this time to be kept.

H 5. Up to three team members are allowed to assist the aircraft for take-off unless otherwise stipulated for a given task.

H 5.1. Assisting team members may only do so on foot. The use of any form of powered or unpowered personal transport is prohibited.

H 6. At the competition director's discretion, up to three tasks may be attempted during one flight,

H 6.1. These must be declared before the flight takes place.

H 7. The task will count if, in the opinion of the competition director, more than one aircraft is capable of attempting it in the conditions prevailing.

H 8. Event scoring:

H 8.1. Duration

H 8.1.1 Duration is measured according to the time the whole aircraft remains continuously airborne.

H 8.1.2 Five points are scored for every second the aircraft is airborne.

H 8.1.3 There is no maximum score for this task.

H 8.2. 200m Time Trial

H 8.2.1 The start and finish are placed 200m apart.

H 8.2.2 The aircraft must cross the start and finish at least 0.7m above the ground.

H 8.2.3 The aircraft must remain airborne for the duration of the task.

H 8.2.4 Points are scored according to V^3.25, where V is the calculated ground speed between the start and finish in m/s.

H 8.3. 1km Time Trial

H 8.3.1 The start and finish are placed 1km apart.

H 8.3.2 The aircraft must cross the start and finish at least 0.7m above the ground.

H 8.3.3 The aircraft must remain airborne for the duration of the task.

H 8.3.4 Points are scored according to V^3.4, where V is the calculated ground speed between the start and finish in m/s.

H 8.4. Slalom

H 8.4.1 The slalom is measured over a 500m course.

H 8.4.2 The aircraft must cross the start at least 0.7m above the ground.

H 8.4.3 A crossing is scored each time the fuselage of the aircraft fully crosses the course centreline over the length of the course.

H 8.4.4 The aircraft is not required to complete the full course length.

H 8.4.5 165 points are awarded per crossing.

H 8.4.6 There is no maximum score for this task.

H 8.5. Distance around a triangular course.

H 8.5.1 The course is a triangle with a perimeter of 1.5km as defined by Figure 1.

H 8.5.2 The centreline of the aircraft must pass on the outside of each pylon.

H 8.5.3 The task is considered over as soon as the aircraft touches the ground.

H 8.5.4 An edge is considered completed when the aircraft crosses the scoring line of the associated edge.

H 8.5.5 500 points are scored for each completed edge.

H 8.5.6 There is no maximum score for this task.

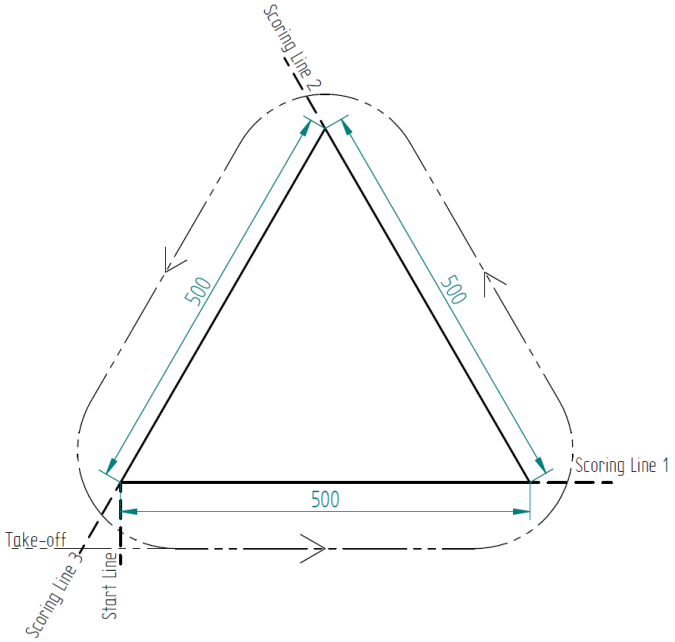

Figure 1: Triangle task course

H 8.6. Unassisted Take-off Performance

H 8.6.1 The aircraft must start completely stationary.

H 8.6.2 Only one additional team member is allowed to stabilize, but not propel the aircraft.

H 8.6.3 The take-off distance is measured, to the nearest metre, from the rearmost contact between the aircraft and the ground at start, to the last point of contact with the ground upon take-off.

H 8.6.4 Points are scored according to (70 – distance) x 50

H 8.7. Landing accuracy

H 8.7.1 The landing point may be placed at the pilot's discretion.

H 8.7.2 The aircraft must pass over a 0.7m high marker, 50m before the landing point.

H 8.7.3 The landing accuracy distance is measured, to the nearest whole metre,

H 8.7.3.1 from the point at which the aircraft first makes contact with the ground

H 8.7.3.2 to the centre of the landing point.

H 8.7.4 Aircraft must come to a complete stop within 40m of the actual landing point of the aircraft.

H 8.7.5 Points are scored according to (30 – distance) x 70.

H 8.8. Take-off From Grass

H 8.8.1 The take-off must be completed wholly on grass/dirt.

H 8.8.2 The aircraft must start completely stationary.

H 8.8.3 The take-off distance is measured, to the nearest metre, from the rearmost contact between the aircraft and the ground at start, to the last point of contact with the ground upon take-off.

H 8.8.4 Points are scored according to (60 – distance) x 50

H 8.9. 200m Time Trial With Take-off From Grass

H 8.9.1 The start and finish lines are placed 200m apart.

H 8.9.2 The aircraft must cross the start and finish at least 0.7m above the ground.

H 8.9.3 The aircraft must remain airborne between the start and finish lines.

H 8.9.4 The take-off must be completed wholly on grass/dirt.

H 8.9.5 The starting position of the aircraft is at the pilot's discretion.

H 8.9.6 Points are scored according to V^3.5, where V is the calculated ground speed between the start and finish in m/s.