

RULE BOOK

3. Drone Race (FPV)

TASK:

An FPV Drone Racing Challenge tests a pilot's skill in visually directing their drone through a dynamic obstacle course, with the help of FPV systems. The event is designed to highlight control precision, agility, spatial awareness, and quick reflexes under real-world conditions.

DESIGN SPECIFICATIONS:

- Drone Build: Drones must be custom-built with proper build standards (secure wiring, strong frame, stable mounting).
- Propeller Size: Minimum 3 inch, Maximum 6 inch.
- Cinewhoops: Allowed (minimum wheelbase 160mm).
- Open-prop Drones: Minimum wheelbase 180mm.
- GPS Modules: Not allowed. Optical flow modules can be used, but provide no scoring advantage/disadvantage.
- Failsafe Configuration: Drones must auto-disarm or throttle cut on signal loss.
- FPV Equipment: The use of FPV cameras, goggles, monitors, or any live camera feed is mandatory. Line-of-sight (LOS) flying is not allowed.
- FPV Systems: Both Analog and Digital FPV systems are allowed.
- Batteries: Each team must bring more than two batteries. Charging provisions will be available in the nearest building.
- Battery Safety: Only approved, undamaged batteries may be used. Unsafe batteries = disqualification.
- Drone Safety Inspection: All drones undergo pre-race checks for frame integrity, motor mounts, wiring, battery security, and prop guards (if used).
- Prop Guards: Optional. Teams using them may receive additional consideration for safety.

GENERAL GUIDELINES:

- Gear & Tools: Each team must use and bring its own gear and tools—sharing is not permitted.
- Drone Sharing: A drone may be shared between team members, but not between different teams.
- Spotters: Prohibited at all times; use is grounds for immediate disqualification.
- Punctuality: Teams must be ready to participate when called. Late arrivals are disqualified.
- Arena Integrity: Major damage to the arena is grounds for immediate disqualification.
- Crash Limit: Only two crashes (including touching the ground) are allowed. A third crash results in disqualification.
- Mid-Race Repairs: Only battery changes and prop changes are allowed; no other repairs or replacements during races. Each repair time is 3 mins max. Other parts can be swapped during break times.

- Scoring & Penalties: Lap counts and penalties will be announced on event day.
- Battery Deposit: To prevent accidental battery plug-ins, all batteries will be collected and only given back when the specific pilot is called to the track.
- Drone Inspection: Once inspected, drones are to be kept in a separate holding area and only taken by the pilot when it is their turn to fly.
- Frequency Management: Pilots must use only their assigned video channels. Unauthorized powering of VTX outside race time = disqualification.

RACE FORMAT:

1. Round 1: Qualifying

- Pilots fly the track individually to set their best lap time.
- All participants take turns one by one.
- The top 8 fastest lap times advance to the next stage.

2. Round 2: Finals

- The top 8 pilots race for the podium.
- Details about the round will be explained on race day.

• Track Design:

The track includes tight turns, elevation changes, and a mix of obstacles (gates, flags, loops). The layout is kept secret until the event day. Any changes in track layout will be informed before the start of a round.

DRONE AND PILOT SAFETY:

- Pre-race Checks: All drones must pass inspection for structural integrity and failsafe settings.
- Pilot Zones: Clearly marked to separate pilots from spectators and ensure event safety.
- Track Barriers: Barriers, netting, and buffer zones protect all participants and prevent flyaways.
- Discipline: Drones that crash or leave the track must be immediately disarmed.
- No Running on Track: Pilots and team members must remain within their designated zones. Running alongside the track is strictly prohibited.
- Emergency Stop: Organizers may halt the event at any time if safety or technical issues.

JUDGING CRITERIA:

- Lap Time: Fastest lap(s) from each round are considered for qualification and advancement.
- Obstacle Handling: Missing an obstacle (gate/flag/loop) results in a +5 seconds penalty each.
- Durability: Drones must complete the race; breakdowns or disarms during the run result in disqualification.
- Pilot Skill: Judged based on precision, consistency, and adherence to the flight path.
- Rule Compliance: Unsafe drones, LOS flying, or reckless behavior = DNF (Did Not Finish).

IMPORTANT SAFETY RULES:

- No Physical Intervention After Start: No contact with drones once the round begins unless directed by officials.
- Battery Safety: Only safe, undamaged batteries are permitted. Improper handling leads to disqualification.
- Safe Flying: Reckless or dangerous flying will result in penalties or disqualification.
- Sportsmanship: Unsportsmanlike conduct may result in removal from the event.

Frequently Asked Questions (FAQ):

1. What types of drones are allowed to participate?

Only multi-rotor drones (quads) that meet the event's size and equipment specifications are eligible.

2. Is FPV (First Person View) flight permitted?

Yes. FPV is mandatory, and line-of-sight (LOS) flying is prohibited.

3. Can teams share drones or equipment during the event?

Drone sharing between teammates is allowed. Tool/gear sharing is not allowed.

4. What happens if my drone crashes during a race?

Teams are allowed up to two crashes (touching the ground counts as a crash). A third crash leads to disqualification from that round.

5. Are repairs allowed between heats or during a race?

Only battery and prop changes are permitted once racing starts. Other repairs are not allowed during rounds.

6. How will rule changes be communicated during the event?

Any updates will be clearly announced, and a revised rulebook will be issued before the start of the affected round.

7. What are the judging criteria for the race?

Judges will assess lap time, obstacle handling, penalties, drone durability, pilot skill, and adherence to the rules.

8. Will there be a chance to practice on the track before the race?

A practice/familiarization lap may be provided, depending on event scheduling. Details will be announced during pilot briefing.

9. What safety measures are in place for pilots and spectators?

Pilot zones, track barriers, and no-fly areas are defined for everyone's safety. Strict discipline is enforced regarding safe drone operation.

10. How do I get help if I have a technical or safety concern during the event?

Contact the designated Race Director or Safety Officer on site; their details will be available at registration.

IMPORTANT NOTE:

ANY RULES MAY BE CHANGED BY THE ORGANISERS ON RACE DAY DUE TO UNFORESEEN CIRCUMSTANCES. ALL CHANGES WILL BE INFORMED DURING THE PILOT BRIEFING.