



Melbourne Multirotor Racing Club Inc.

Drone Racing Rules

Effective April 14th 2019 until further notice

Version 3.0

Purpose

This document outlines the safety and operational procedures to ensure participants enjoy fair competition in a safe environment.

The racing rules cover drone racing events held by the Melbourne Multirotor Racing Club Inc.

Race Day Schedule

The race day schedule will be nominated prior to the event being run and is subject to change throughout the racing calendar.

Class and session order will be nominated prior to the event and is also subject to change by the committee.

Each session will begin with practice heats for each class run in succession of each class, followed by all elimination heats and then finals.

In the event of a tie breaker after all elimination heats are run. The pilots who are tied on points will run head to head to decide who is eliminated and who goes into the class final.



Racing Classes

MMRC currently runs 3 separate classes of racing.

Super Class

For pilots competing at the highest level.

Regular Class

Majority of pilots competing at club events.

Rookie Class

For beginners or new pilots to the sport. Pilots in this class may only compete for one complete season in this division, then must move up to Regular Class for the next season.

NOTE: Pilots may elect to move to a higher class at any time during a season. Pilots may not move to a lower class unless given express permission from the race director.

In the event a pilot moves classes, the pilot's adjusted accumulated points will be taken with them to the new class.

Craft Specifications

Max Frame Size:	305mm motor to motor
Max All Up Weight:	800g incl. battery
Max Prop Size:	no limit but must be made of a plastic material
Max Battery:	up to 6S
Max Voltage:	4.35 Volts per cell (26.1 Volts max total)
Video Transmitter Power:	25mW only
Control Link:	For 900Mhz Set to 100mW
Failsafe set:	Must disarm/disable motors within 2secs of radio signal loss
OSD:	It is preferred that pilots display their callsign in their video feed



Aircraft Scrutineering

If required, competitors must submit all aircraft being used/flown at the event for scrutineering inspection. During the inspection a number of items will be checked to ensure the aircraft is both safe and compliant.

A competitor that uses more than one aircraft including backup aircraft must ensure all are inspected and logged by race officials before racing commences.

If a competitor's aircraft fails scrutineering inspection, they will be given the opportunity to correct any defects and resubmit it for inspection prior to flight operations commencing.

New pilots however must scrutineer at the start of their sessions where required and show that they have competency in selecting and changing their video transmitter channel and show their aircraft has an operating failsafe.

It is the responsibility of each competitor to ensure that their aircraft complies with all necessary rules, regulations and adhere to club safety or race rules and/or MAAA MOP's.

MAAA Mops are available at: <https://www.maaa.asn.au/club-support/maaa-documents>

The following items will be checked during the inspection:

Overall/Safety Inspection

- Airframe is of solid construction and no items are loose or in danger of becoming separated from the aircraft during flight and may cause a risk or injury.
- All wiring is contained within the airframe is not loose, nor risks becoming loose during flight and becoming entangled in the props causing failure.
- All wiring and connectors are of sufficient construction as to not cause a mid-air failure.
- Propellers are securely attached, are not damaged and installed in the right direction. Plastic materials only.
- Failsafe configured and demonstrated to be working.

ACMA Compliance

- Video transmitter is using a maximum output rating of 25mw \pm 10%.

Class Compliance

- Aircraft adheres to all class restrictions specified in these racing rules for which it was entered. If an aircraft is to be used in multiple classes, then it must comply with all classes restrictions for all classes it's entered in.



Flight Operations

All pilots must obey the direction of the Race Director and officials.

The Race Director may enlist help from others to officiate the race. Eg. Flight line director, Pit marshal etc.

All aircraft should operate below 100m (typically lower than the surrounding trees).

If a pilot hits an obstacle and is no longer in control they are to immediately disarm the motors.

No pilots are allowed on the field while other aircraft are in the air. Only when the Race Director identifies that the track is clear are the downed aircraft able to be retrieved.

A designated landing area will be clearly defined and placed far enough away as to not interfere with the pilot's video feed.

If the Race Director identifies a problematic VTX during a race meeting, the Race Director may request the pilot change the VTX or antenna and/or its cable. This is to ensure the VTX does not interfere with other pilots during the race meeting.

No pilot should power on a VTX while Flight Operations are underway!

The Race director will confirm that the track is clear and all pilots are ready before commencing the race start procedure.

During operations the Race Director may announce the following safety callouts:

DOWN, DOWN, DOWN

You **MUST LAND IMMEDIATELY** wherever you are on the course and disarm. Your props should not continue to spin. This maybe in response to an unsafe condition on the track. Eg. Battery fire, person on the track etc. You are not permitted to continue flying back to the start line or landing area. You must not take off again until directed to by the Race Director.

The Race Director will determine if the race is to be re-run or scored according to position.

RACE ABORT/RE-RUN/RETURN TO THE START

You must return immediately to the start line or landing area as soon as it's safe to do so.

If at any time the Race Director calls a halt to the race, pilots must follow the instructions given. If the Race Director calls for the pilots to land immediately due to safety concerns, they must do so immediately.



Practice

The race program will contain at least 1 practice period usually at the start of the event prior to racing commencing. There may be additional practice periods determined as part of the program or ad-hoc at the discretion of the Race Director.

Pilot's should not practice the track out of any official practice periods.

During practice all pilots must adhere as normal to Flight Operations including fair play and safety.

If a pilot needs to test fly, they may do so after seeking permission from the Race Director but must not fly the track as this is deemed as practicing out of a normal practice period.

Race Rules

If a competitor is unable to make it to the start of the race a DNS (Did not start) will be recorded.

Race start. At the starting tone the objective is for a clean and fair start. Falling of the blocks may not require a re-un if the mistake does not give you an advantage or disadvantage another competitor.

Hole shot rule. If a collision occurs before the first gate or nominated flag a re-run will be called.

Pilots must fly the track and obstacles in the correct order and direction as prescribed. If a pilot misses an obstacle, their forward progress in the race is suspended until they complete the missed obstacle. Failing to do so will result in a DNF. Flags are considered to extend infinitely into space.

Finish gate. The front plane of the gate is defined as the interior perimeter of the opening, perpendicular to the race line. Any part of the aircraft (still attached) must breach the front plane of the gate in order for the gate to count. (The Thayer-Temkin Clause)

If a competitor crashes out or is unable to finish before the allocated time, a DNF (Did not finish) will be recorded.

The Race officials/committee may vote/make decisions for anything that may occur outside of these rules.



Safety & Compliance

CASA and MAAA compliance

All competitors must ensure that they follow all directions by race officials when it comes to Safety and Compliance.

All competitors must ensure that they comply with any local, state and federal regulations/bi-laws/laws as defined by said regulatory bodies such as local council, CASA and ACMA.

All competitors must ensure that they follow all MAAA MOP's (Manual of Procedures) when flying at a club event.

Failure to do so will result in you being asked to land and possibly disqualified from competing further at the event.

For a full list of CASA and ACMA regulations see their respective websites or contact the organization directly for more information.

CASA - <https://www.casa.gov.au/>

ACMA - <http://www.acma.gov.au/>

MAAA - <https://www.maaa.asn.au/club-support/maaa-documents>

Safety Issues

Safety is MMRC's primary concern. It is every competitor's responsibility to ensure they operate themselves and their aircraft in a safe and professional manner.

A pilot's safety briefing will be performed prior to flight operations commencing, this is usually given by the Race Director and includes the course layout, any safety issues or hazards to be aware of and any emergency situations that might occur.

All spectators and visitors must be aware of the potential safety hazards and it's everyone's responsibility to ensure everyone is safe during the event.

Fire Hazards

Lipo batteries are potential fire hazards when punctured. It is essential that everyone is aware of the locations of any extinguishers and sand buckets located around the course and their use in the event of a fire.

In the event of there being a total fire ban at the location of the event then the event will be postponed or cancelled. There will be NO flight operations during total fire ban days.