

Canadian Drone Racing Rules & Regulations

Canadian Drone Racing (CDR) and our Race Director want to ensure a Safe and Fun experience. All attendees must be aware of and adhere to the following rules and regulations on Race Day.

The following were previously developed by Joe Scully at FPV Racing Events. CDR has adopted and modified to suit the needs of our Edmonton race.

All Attendees

1. Do not enter racing area and stay behind the safety netting at all times.
2. Do not touch the safety netting.
3. Do not attempt to retrieve or free any object that becomes intertwined in the safety netting.
4. If you are injured, please immediately bring it to the attention of CDR staff.

Event Staff

1. All staff must receive authorization from Race Director prior to entering the designated race area and may only do so once the session, heat, or race has expired.
2. Track entry between heats will be limited to less than 5 minutes.
3. All staff is to be made aware of the location of fire extinguishers and first aid kits.
4. Ensure 2 way radios are available and adequately charged,
5. If you are injured, please immediately bring it to the attention of your supervisor.

Racers

1. Must attend the safety meeting and sign the appropriate waivers from Canadian Drone Racing and venue.
2. The following is not permitted and will result in disqualification without refund.
 - 2.1. Flying or hovering anywhere outside of the designated racing area.
 - 2.2. Powering-up any object to be controlled remotely without authorization from the Race Director.

2.3. Off track Video Transmission (VTx)

2.3.1. Any damage caused to a "Lost" craft or caused by a "Lost" craft, will be the liability of the person responsible.

2.4. Aggressive behavior

3. Be both aware and ready for your race. Wait next to the Flight Line the race before yours for transponder mounting. Once your race is called to the grid, you will forfeit your heat if not ready.
4. Prepare to stage or mount any supplied equipment the race prior to yours.
5. Do not enter the Flight Line area unless it is your time to race or spot
6. Only registered racers may enter the Flight Line area
7. Ensure that your failsafe mode is "down" and not "hover".
8. Opportunities for testing and tuning will be available during practice runs as required or authorized by Race Director.
9. Intermittent opportunities for rapid VTx testing may be made available in between racing sessions or heats. Authorization from Flight Line or Race Director is required.
10. As the race before yours is staging and running, place the VTX and Transponder on your craft.
11. Use the assigned channels only at the scheduled time / heat
12. Be gentle with any supplied equipment (VTX/Transponder). Damage results in liability for replacement.
 - 12.1. Note: Video Transmitters are currently not planned to be supplied for the Edmonton Race. A small quantity may be available for purchase or rent at the race, but racers should not rely on this.
13. All Racers will be allowed to use their own VTX as long as it does not exceed the power rating (25mW) and is compatible with all assigned RACEBAND channels.
 - 13.1. Note: Video Transmitters are currently not planned to be supplied for the Edmonton Race. A small quantity may be available for purchase or rent at the race, but racers should not rely on this.
14. Exceeding the power rating will result in immediate removal from the premises.
15. You will be assigned a Number before your session/heat/race. This correlates to VTX Channel and Transponder provided by Race Management.

16. You may be directed to carry your craft through the Finish Gate to “Check-in” transponder.
This will occur as your heat is called to the grid.
17. **DO NOT** power up video until permitted to do so by the Flight Line or Race Director. This will occur immediately before your race.
18. Place your craft in the “TAKE OFF” zone when directed. Power up video on the take-off zone only. Go to assigned position in Flight Line.
19. Bump boxes may be used provided:
 - 19.1. They do not exceed 5" off of the deck at its highest point
 - 19.2. Are not angled greater than 25° degrees.
20. Tone starts will be in place.
21. Flying extra laps unauthorized by Race Director is not permitted.
22. Freestyle flying unauthorized by Race Director is not permitted.
23. Keep your LiPO in a LiPO sack or approved fire resistance container. Failure to do so will result in disqualification.
24. Unless authorized by the Flight Line or Race Director, entering of track area after a race has started is not permitted.
25. Once you are done racing and the race is over, retrieve your craft, gently remove any leased or loaned VTX/Transponder, and return to your assigned seat to spot the next race. You will have 3 minutes or less to return to your seat. All Racers are required to spot. Failure to do so will result in penalties.
26. Important Commands:
 - 26.1. “On the tone in less than 5” – command prior to a tone start.
 - 26.2. “3, 2, 1, Go” – in lieu of a tone start
 - 26.3. “Stop, Drop or Hover” – immediately cease forward direction. Save your craft as best as possible.
27. Proper sportsmanship and conduct is to be exemplified. Examples of poor conduct would include, but are not limited to: impacting another Racer by speech, equipment tampering or aggressive behavior.
 - 27.1. 1st – Verbal warning unless decided otherwise

27.2. 2nd – Lose your fastest qualifier / podium placing

27.3. 3rd – Exit

28. Must be able to demonstrate basic piloting skills.

29. Race Director has the executive decision on all race officiating matters.

Race Classes

Current classes are defined to maximize inclusiveness.

1. 4" Props
2. 5" Props
3. Open (max 6" prop)
4. Beginners (all multirotors welcome – FPV only)

Spotters

1. Every racer is required to spot. Each racer will spot the same Grid/Channel/Transponder assignment they ran on during their heat
(Ex. Run on Channel #2, Spot on Channel #2).
2. It is every racers responsibility to ensure that their spotting requirement is covered. If you are unable to spot, you must provide a spotter in your place. If the Race Officials have to supply a spotter in your absence, you will be penalized.
3. Spotters will count missed gates (via tally) for their assigned racer.
4. Following the heat, the Spotter will inform the Racer and the Flight Line Director of any penalties.
5. Any grievances will be settled by the Flight Line Director or Race Director.
 - 5.1. If a DVR Video Replay system is supplied by management, the Racer may request a Video Review.
 - 5.2. The Racer will notify the Flight Line and/or Race Director of the request, and provide a \$50 Video Review Fee deposit.
 - 5.3. The Race Director will inform the Racer of the time the Video Review will take place.

- 5.4. The Flight Line Director and/or Race Director will review the race, and inform the Racer of their decision.
- 5.5. If the Video Review is deemed in the Pilots Favor, the \$50 Video Review Fee is returned to the Racer.
6. Any discrepancy regarding the printed results is to be brought to the Race Director's attention via written claim.
7. Results will be deemed FINAL after 30 minutes of posting.

Race Format

1. Advertised format and schedules may be modified at the discretion of the Canadian Drone Racing and our Race Director.
2. We rely on self-regulation and group cooperation to ensure fast transition between each heat. It is therefore the responsibility of each racer to be prompt and punctual before, during, and after your heat(s). Please, at all times, be aware of what race is on the track and when you are up next.
3. Race Day may consist of 1 practice round, a minimum of 1 qualifying round, and a championship main round.
4. Practice Sessions will be 2-3 minutes in duration. If utilized to seed the 1st Qualifier Round, each racers fastest individual lap per class will be used.
5. Qualifiers will be 2-3 minutes in duration. If more than one Qualifying Round is offered, a "Rocket Round" will be used to select each Racers fastest Qualifying Time (# of Laps recorded within the designated time period). Qualifying may be based on fastest 5 consecutive laps within the 3 minutes allotted.
6. Mains will be based on a pre-determined number of laps (TBD on Race Day). When the leader goes onto their final lap, everyone crosses onto their final lap.
7. When more than one Championship Main is on the schedule, transfer or bump-up positions will be available. These will be announced as final between qualifying and the mains. (Ex. Top 2 from the B-main instantly qualifies for the A-main).

8. Race Day programming is designed to allow for an equal amount of flight time per racer as possible, regardless of skill.

Timing & Scoring

1. A Transponder System will be in place where available. Currently the only supported brand of transponder is *iLaps*
2. Pilots may use their own compatible Transponder. This number must be provided to the Race Director at Registration. Race Management is not responsible for any malfunction of a Pilot's personal transponders.
3. Spotters are to track missed gates. Each missed gate will be recorded as a 10 second penalties before results are final.

Re-Race & Re-Start

1. If a Racer is fouled due to reasons outside of their control (Ex. lost video, crashed into at start line, major scoring discrepancy, etc.) Race officials may call a Re-Race.
2. If a race starts and was not deemed clean or fair (Ex. lost video for a number of Racers, object on the track, etc.), Race officials may call a Re-Start
3. Re-Starts will either happen right away, only following a majority vote of the Racers in that heat, or as late as possible in the program (Ex. the end of the round, or immediately before the next-higher main).
4. Re-Races will be run at the end of the round. In Practice or Qualifying, these may be all classes combined.

Supplied Transponder Installation and Use

1. An iLaps Drone Model Transponder will be supplied by Race Management.
2. Please mount it in a safe place on your craft, and attach it to an open 5V Channel.

- Alternatively, if you do not have an open 5V Channel, attaching to a second LiPO and using spare pins (Pin-to-Pin) is acceptable.

Video Transmission (VTX):

- Racers will use their own VTX and it must be:
 - 25 mW
 - 5.8 GHz
 - Compatible with RaceBand
- The only frequencies used in the race will be the 5.8 GHz RaceBand frequencies, on 25 mW transmitters. The VTX Director is responsible for making sure the RaceBand transmitters operate within the frequencies allocated and that these do not exceed the allowed power levels

FPV Setup

- There will be a total of 8 flying stations.
- During the test races, Race Officials may decide to run less than 8 Racers in a race to:
 - Allow for better frequency separation
 - Mitigate issues with interferences or certain frequencies not performing well.
- The 8 flight stations will be set up before the race,
- Racers can bring their own goggles to connect it to the diversity receivers at each flight station.
- Each of the 8 stations will have its own frequency allocated and should not be changed throughout the race. The frequencies will be as follows:

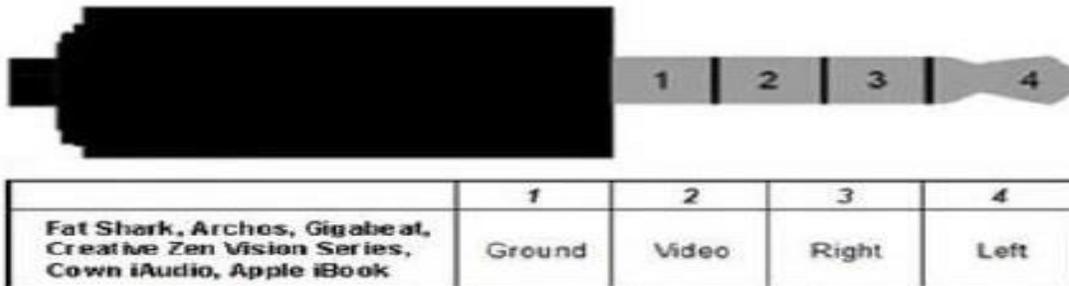
Stn.1	Stn.2	Stn.3	Stn.4	Stn.5	Stn.6	Stn.7	Stn.8
5658MHz	5695MHz	5732Mhz	5769Mhz	5806MHz	5843MHz	5880MHz	5917MHz
RH	LH	RH	LH	RH	LH	RH	LH

Goggle Requirements

- The video feed provided will be through a standard FatShark/Immersion AV cable terminated in a 4 position 3.5mm jack. The pinout for attaching your goggles (if not FatShark) is displayed below:

ImmersionRC/FatShark receivers

ImmersionRC receivers, including the Unos, Duos and the Fat Shark LCD glasses, all use a standard 4-pole 3.5mm jack.



If your goggles receive a composite (yellow video, red audio left, white audio right) input, please provide your own cable, as the Immersion RC RaceBand Station also offers a Female Composite Out.

Traditional 4-Up Signal Assignment:

In an occasion that calls for traditional signal assignment, the following Signal Assignments will be used:

4-Up Racing	Fatshark/Immersion	DJI/FoxTech	Boscam A	Boscam B	Raceband
Channel A	5740 Ch1		5725 Ch8	5733 Ch1	5732 Ch 3
Channel B	5780 Ch3		5765 Ch6	5771 Ch3	5769 Ch 4
Channel C	5820 Ch5		5805 Ch4	5809 Ch5	5806 Ch 5
Channel D	5860 Ch7		5845 Ch2	5847 Ch7	5917 Ch 8
Channel E		5645 Ch4			

Base Station Channel Array:

Base stations are capable of tuning into the following 32 Channels:

		CH1	CH2	CH3	CH4	CH5	CH6	CH7	CH8
Traditional	Band 1	5740	5760	5780	5800	5820	5840	5860	5880
	Band 2	5705	5685	5665	5645	5885	5905	5925	5945
	Band 3	5733	5752	5771	5790	5809	5828	5847	5866
Raceband	Band 4	5865	5845	5825	5805	5785	5765	5745	5725