

# World Drone Cup 2024 - Rules

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## Disclaimer

These rules are written by a non native English speaker. In case there are questions, unclear instructions or wrong used names talk to us! It is not allowed to use translation mistakes for your own advantage. In case this is violated there will be warning, penalty, rerun, disqualification or other measurements to clarify the situation, undo the gained advantages and resolve the mistake!

## Schedule

This schedule is a rough frame. Due to unpredictable things like weather, technical issues (we're flying on a partially active airport with hundreds of thousands of visitors), security shutdowns (2018 we had to pause 75% of a day when the president visited the fair) we might face some short term adjustments.

### Wednesday - Training Day/Seeding

Wednesday will be used for training and seeding. Training for you to get used to the track and the environment as well as for us to dial in the racing equipment. Also we will race a couple of heats for seeding. More on that later.

### Thursday - Qualification

Thursday will start with 1 or 2 warm-up heats to get you in the mood. Afterwards the day will be dedicated for the qualifications to determine your starting position during finals

### Friday - Finals

Again, we'll start with some warmup heats to get the juices flowing. Afterwards we're going into the finals to determine the 2024 World Drone Cup Champion. Finals will be a double elimination bracket with chase the ace for the final 4 pilots.

## General

### Local occurrences

We are flying on a partially active airport with thousands of spectators, smartphones, WiFis and other public and military transmitters. Be prepared for a bad video feed. This is not your backyard field outside your small village!

There will be airshows and flight demonstrations all day long. There will be military jets flying in quite close proximity. These things are f\*\*\*ing loud. They will not pause or fly in silent mode for us. Be prepared for that and be prepared to be shouted at by us.

## Drones

Framesize: 4" - 6"

Batteries: up to 6s

LEDs (optional): 4 LEDs face back/down to be visible for following pilots

Switchable colors would be preferred

25mW VTx, analog and HDZero only, needs to be controllable through your remote (i.e. if a drone crashes in an inaccessible location, switching on PitMode or to a trash channel)

25mW Crossfire (Turkey is using 900MHz GSM, so set your Crossfire to 868MHz!)

100mW Tracer/Ghost/2.4GHz

**In 2019 pilots with "regular" 2.4GHz RC links had major issues/fail safes on this location!**

## Track

Obstacles have to be passed in the correct order and from the designated side. The travel between obstacles is up to the pilots (for example CW or CCW corkscrew for ladder gates).

## Unsportsmanlike conduct

Actions and behaviors that have a chance to hold back other pilots from delivering their best performance can be called out by the race leads. Violations can lead into a warning, penalties or disqualifications.

Insults, offenses, discriminations, assaults and other forms of physical and psychological attacks will not be tolerated!

## Etiquette

The pilot's area will be equipped with a wooden floor. This might swing and give when people are walking. Therefore movement within or in close proximity to the active pilots area has to be limited to the absolute minimum. Personal spotter/helper and pilots have to stay in place until the very last pilot of the current race has ended his flight. Race leads might move for good reasons.

Communication between spotters/personal helpers and the pilot has to be non disturbing to other pilots.

"Complaining" has to be kept to a minimum. Race leads will take note and call out violations of others if necessary.

In case of video issues or failsafes, it's in the pilots responsibilities to judge over a safe flight. In case the safety is jeopardized the pilot has to land or "safely crash" his drone on the spot, not crossing the flying field to get to the designated landing zone. Discussions with race leads will be held AFTER all remaining pilots have landed/crashed.

No drone will be powered up in the waiting pilots area! If you need to check your video feed or repaired drone, come to the race line, ask for permission and do your check while the other pilots are setting up/collecting their drones!

Violations of these etiquettes can lead into a warning, penalties or disqualifications.

## VRx equipment

Supported systems are analog and HDZero. We will not provide video feed to the pilots this year! You have to use your own receivers!

**We are flying at a partially active airport. Be prepared for a bad video feed.**

## Reruns

Reruns will be called as early as possible, preferably before the current race ends. This can not be guaranteed. Judges will decide if those pilots, that have crashed before or caused the event requiring a restart, will be allowed in the rerun.

## Conditions for a restart

- fire on the track
- collapsed or compromised obstacles
- people on the track or other unsafe conditions
- false start
- Holeshoot rule

## False Start

Falling of the start block will be considered as a false start.

During qualifying:

A false start will result in an abort and warning for all current pilots. Another false start in that race will result in deletion of the pilots first lap.

If a false start is missed by the officials and the false start is brought to attention right after the race, the officials will review the DVR and make a decision. If the pilot that jumped the gun gained an advantage his first lap will be deleted

During finals:

A false start will result in an abort and warning for all current pilots. A second false start will result in disqualification for that race.

If a false start is missed by the officials and the false start is brought to attention right after the race, the officials will review the DVR and make a decision. If the pilot that jumped the gun finishes in an advancing position, the other advancing pilot will keep his position. All non-advancing pilots and the pilot that jumped the gun will re race for the remaining advancing position.

## Fly until the whistle blows

Pilots must continue to race unless one of the race leads or the timing system calls for landing. Calls from other pilots, spectators and others have to be ignored.

## Holeshot rule

For races with a collective start (all pilots start at the same time) there will be a holeshot obstacle. Midairs that occur before the first passing of that obstacle will result in a rerun for all pilots. There will be only one restart per race. In case of midairs during the rerun the race will continue.

## Racing System

The racing system

### Practice

Practice and warm up heats will be handled like like a Fastest-3-Consecutive run:

- Pilots will be grouped by random
- 2 minutes to fly as many laps as you can squeeze out of your batteries
- There is no claim for results/reruns in case timing system fails

### Seeding

Seeding will be done by Fastest-3-Consecutive

Pilots will be randomly grouped. Race duration is 120 seconds. Goal is to fly your fastest 3 consecutive laps in a race. It is not mandatory to fly all 120 seconds and therefore damage your batteries. Timing for each pilot starts after the first pass of the timing gate.

These races will start staggered with a call out of the drone numbers.

In case a pilot missed an obstacle he must go back and pass the obstacle again. In case he doesn't re-approach, the timing for this lap will go on until he reaches the missed gate and passes it correctly.

Your single best result will be used for Seeding to allocate you to either Group A or B for Qualifications. There will be X rounds of Seeding.

Fastest Pilot will be Group A / Position 1  
2nd fastest will be Group B / Position 1  
3rd fastest will be Group A / Position 2  
4th fastest will be Group B / Position 2  
and so on. Full diagram on last page

## Qualifying

Qualifications will be done in two groups. Pilots got assigned to either Group A or B by their results of the seeding. See "Seeding" and/or diagram on the last page.

Each pilot will face each other. This requires 5 races per pilot (16 Pilots per group, 15 opponents, 5 times racing against 3 pilots). Pilots will race in a regular "First to finish X laps". The amount of laps will be determined on the race weekend and adjusted to the track length.

Races will start on the tone. The whole procedure is:

"Pilots, arm your quads" call out

Three tones in 1 second intervals

Random delay of 1...5 seconds

Single tone to start:

"Pilots, arm your quads" \_beep\_beep\_beep\_pause\_beep

The winner of each race gets 4 points, 2nd place gets 3 points, 3rd place gets 2 points and 4th place gets 1 point.

Points will add up. The pilot per group with the most points after 5 races gets 1st place in his group, other pilots following in descending order according to their points. Pilots with the same amount of points will be sorted according to their seeding result (Fastest-3-Consecutive)

Overall qualifying results will be created by sorting all pilots by their final position in their respective groups, alternating between groups.

Best pilot of group A -> Top Qualifier

Best pilot of group B -> 2nd Qualifier

2nd pilot of group A -> 3rd Qualifier

2nd pilot of group B -> 4th Qualifier

and so on, full list see diagram on the last page

## Finals

Based on the qualifying results pilots will be seeded into groups of four.

Finals mode will be double elimination with the best pilots per group advancing in the winners bracket and the two remaining pilots will drop into losers bracket or out of competition.

Final races will start on the tone. The whole procedure is:

"Pilots, arm your quads" call out

Three tones in 1 second intervals

Random delay of 1...5 seconds

Single tone to start

“Pilots, arm your quads”\_beep\_beep\_beep\_pause\_beep

Finals are “first to x laps” where the amount of laps will be determined on the race weekend and adjusted to the track length.

As soon as the first pilot finishes the designated amount of laps all other pilots are in their last lap.

The final 4 pilots will end the event in a “chase the ace”. Winner is who gets two wins. The rest of the podium will be sorted by the combined positions of these races. Tiebreaker being Fastest-3-Consecutive times from Seeding.

## Seeding for Qualification

### Fastest 3 Consecutive Laps

Position 1	Group A Position 1
Position 2	Group B Position 1
Position 3	Group A Position 2
Position 4	Group B Position 2
Position 5	Group A Position 3
Position 6	Group B Position 3
Position 7	Group A Position 4
Position 8	Group B Position 4
Position 9	Group A Position 5
Position 10	Group B Position 5
Position 11	Group A Position 6
Position 12	Group B Position 6
Position 13	Group A Position 7
Position 14	Group B Position 7
Position 15	Group A Position 8
Position 16	Group B Position 8
Position 17	Group A Position 9
Position 18	Group B Position 9
Position 19	Group A Position 10
Position 20	Group B Position 10
Position 21	Group A Position 11
Position 22	Group B Position 11
Position 23	Group A Position 12
Position 24	Group B Position 12
Position 25	Group A Position 13
Position 26	Group B Position 13
Position 27	Group A Position 14
Position 28	Group B Position 14
Position 29	Group A Position 15
Position 30	Group B Position 15
Position 31	Group A Position 16
Position 32	Group B Position 16

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## Qualification

Group A	Position 1	Each Pilot faces each other Pilot of this groups	⇒	Pilots sorted by achieved points	Group A Place 1	⇒	Group A Position1	⇒	Pilot 1
	Position 2				Group A Place 2		Group B Position1		Pilot 2
	Position 3				Group A Place 3		Group A Position2		Pilot 3
	Position 4				Group A Place 4		Group B Position2		Pilot 4
	Position 5				Group A Place 5		Group A Position3		Pilot 5
	Position 6				Group A Place 6		Group B Position3		Pilot 6
	Position 7				Group A Place 7		Group A Position4		Pilot 7
	Position 8				Group A Place 8		Group B Position4		Pilot 8
	Position 9				Group A Place 9		Group A Position5		Pilot 9
	Position 10				Group A Place 10		Group B Position5		Pilot 10
	Position 11				Group A Place 11		Group A Position6		Pilot 11
	Position 12				Group A Place 12		Group B Position6		Pilot 12
	Position 13				Group A Place 13		Group A Position7		Pilot 13
	Position 14				Group A Place 14		Group B Position7		Pilot 14
	Position 15				Group A Place 15		Group A Position8		Pilot 15
	Position 16				Group A Place 16		Group B Position8		Pilot 16
Group B	Position 1	Each Pilot faces each other Pilot of this groups	⇒	Pilots sorted by achieved points	Group B Place 1	⇒	Group A Position9	⇒	Pilot 17
	Position 2				Group B Place 2		Group B Position9		Pilot 18
	Position 3				Group B Place 3		Group A Position10		Pilot 19
	Position 4				Group B Place 4		Group B Position10		Pilot 20
	Position 5				Group B Place 5		Group A Position11		Pilot 21
	Position 6				Group B Place 6		Group B Position11		Pilot 22
	Position 7				Group B Place 7		Group A Position12		Pilot 23
	Position 8				Group B Place 8		Group B Position12		Pilot 24
	Position 9				Group B Place 9		Group A Position13		Pilot 25
	Position 10				Group B Place 10		Group B Position13		Pilot 26
	Position 11				Group B Place 11		Group A Position14		Pilot 27
	Position 12				Group B Place 12		Group B Position14		Pilot 28
	Position 13				Group B Place 13		Group A Position15		Pilot 29
	Position 14				Group B Place 14		Group B Position15		Pilot 30
	Position 15				Group B Place 15		Group A Position16		Pilot 31
	Position 16				Group B Place 16		Group B Position16		Pilot 32

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## Finals

Pilot 1
Pilot 16
Pilot 17
Pilot 32
Pilot 2
Pilot 15
Pilot 18
Pilot 31
Pilot 3
Pilot 14
Pilot 19
Pilot 30
Pilot 4
Pilot 13
Pilot 20
Pilot 29
Pilot 5
Pilot 12
Pilot 21
Pilot 28
Pilot 6
Pilot 11
Pilot 22
Pilot 27
Pilot 7
Pilot 10
Pilot 23
Pilot 26
Pilot 8
Pilot 9
Pilot 24
Pilot 25