Belgian Navy Drone Race 1 and 2 Oct 2022

Information and regulations

Latest update: September 8, 2022

Info

In this document you will find information about the rules, location, catering and more. Please take the time to carefully read through this document. For any questions or last minute updates, please reply to the email, join the DRF WhatsApp group or the discord.

Looking forward to welcoming you soon!

The Belgian Navy Drone Race is organized by Drone Racing Flanders (DRF).

This info document describes the rules as applied during the race. However, the organization may decide to adapt the rules. In the pilot briefing the final rules and race format, and possible deviations as described in this document are communicated.

Date

October 1: 8.30 - 20.00
October 2: 9.00 - 18.30

Technofest 2022

During Technofest 2022 the Belgian Navy will open its doors to the public. There will be plenty of activities and things to see and do.

Location

The race will take place at the Belgium Navy base in Zeebrugge during the Technofest 2022 festival. Note that the drone location is in a military zone. Access to the location is limited. Pilots must be registered before.

Important note: please arrive at the location as indicated in the time table below. The organization will pick you up and guide you to the race location.

Address: Graaf Jansdijk 1, 8380 Zeebrugge

Google maps :
https://goo.gl/maps/4FSNQyo66Rjd6xSG7

Facilities

Parking: There is free parking at the racing location. You must follow the instructions of the organization.

Tables and chairs are available.
230V is available, please bring your extension cord.

Toilets are available.

Food and Drinks

There are several food trucks at the locations, where you can buy food and drinks.

Time Table

Saturday October 1

<mark>08:30</mark>   Arrival, pilot pickup at the gate. BE THERE IN TIME!
09:00 - 10:00   Pilot registration / gear check
10:00 - 10:30   Briefing and walking the track
10:30 - 11:30   Practice round(s)
11.30 - 20:00   Qualifying rounds

Sunday October 2

<mark>09:00</mark>   Arrival, pilot pickup at the gate. BE THERE IN TIME!
09:30 - 15:00   Qualifying rounds
15:00 - 15:30   GoPro round
15:30 - 17:30   Knockout / double elimination
17:30 - 18:00   Finals / chase-the-ace
18:00 - 18:30   Prize ceremony

Registration

Pilots must register in advance via the online registration form that was included with the race announcement.

A maximum of 32 pilots can register for the race. Your registration is only confirmed when the entry fee of **€42** is paid via the registration link https://linkpay.nl/droneracingflanders/belgian-navy-drone-race

You will receive a confirmation email when your registration is completed.

Gear check

Drones must be checked by the organization before 10am on Saturday, October 1.
We will be testing failsafe and checking VTX power (25mw maximum). We may do spot checks during the competition and if you are found to be transmitting at a power level of more than 25mw you will be disqualified. For failsafe testing please ensure your props are removed and that your failsafe is set to cut the motors within one second. If you are using TBS Crossfire, update your firmware to the most recent firmware and set it to 25mw. You may use telemetry, however if we have any failsafe issues during the event we may specify for ALL pilots to switch telemetry off.

Every pilot needs to have insurance to fly. Please bring proof of your model flying insurance.
Also see the quadcopter requirements below.

Race Flying Format

Practice and Qualifying

There are 32 pilots broken down into 8 heats of 4 pilots. Three laps will be flown in a time of max two minutes. There will be 1 practice round; the best single round will determine your seed position for qualifying. Pilots will be distributed according to skill level: fastest 4 are in heat 1, 5-8 are in heat 2, and so on.

There will be at least 10 rounds of qualifying. Your best 3 rounds, ranked on top 3 consecutive, determine if you have been qualified for the knock-out. Since top 16 pilots enter the knockout, your qualifying score determines your starting round in the knockout.

Allotment in heats, times, rankings will be available on Rotorhazard and livestream on Youtube.

Knockout: Double Elimination

The top 16 pilots make it to the double elimination knockout. In each round 3 laps will be flown. The order of passing the finish line determines your position, lap times don't count. The pilot that completes the 3 laps first wins the race. After the first pilot has finished, the race ends. As example: in case you flew 1 lap only and the first pilot completed 3 laps, your race ends directly after you passed the finish line, where in this case you flew 2 laps only.

In case of a crash; the pilot that has the most rounds and came the furthest
in a round gets a higher position than a pilot that crashed before you. However, finishing after only a single round gives a higher position than crashing in your 3rd lap and not being able to finish.

Pilots will be seeded as: best pilot in race 1, next best pilot in heat 2, pilot 3 in race 3, pilot 4 in race 4, pilot 5 in race 1, pilot 6 in race 2 and so on.

If there is a tie, the pilot with the fastest top three consecutive during the finals will rank higher.

Finals: chase the ace

The 4 remaining pilots will battle for the podium in the chase the ace format. In each round, three laps will be flown. *The first pilot to win two heats will be the winner of the race*. For places two to four, points totals will be calculated as in the knock-out. If there is a tie, the pilot with the fastest top three consecutive during the finals will rank higher.
The finals will have a maximum of five rounds.

Timing system

We will be using the Rotorhazard timer. Please ensure that you have a good quality VTX and antenna putting out the correct power (25mw) in the correct band (Raceband 1, 3, 6 or 8), as allocated to you by the race officials.

Quadcopter requirements

- **Frame dimensions**: 5 inch frame
- **Props**: Maximum 5''
- **Batteries**: Maximum 6s HV. It is not permitted to charge above 4.35v per cell
- **VTX**: ImmersionRC Tramp, TBS unify or another high quality VTX; maximum 25mw. Must support raceband frequencies
- **Timing**: We will be using Rotorhazard VTX timing
- **LEDS**: A minimum of three LEDs (one strip) are mandatory on your quad.
- **RC Link**: You can either use a standard 2.4GHz control, ImmersionRC Ghost, ExpressLRS, TBS Tracer or a TBS Crossfire on 868MHz (Most recent firmware, 25mw, telemetry may be ON. In the case of failsafe issues we may request all pilots to switch off their telemetry.)
- **Video Format**: PAL or NTSC cameras are both permitted.
- **Insurance:** Every pilot needs to have insurance to fly. Please bring proof of your model flying insurance.

Race Rules/Infringements & Event Protocol

- You are responsible for your own equipment in case of technical problems.
In case of failsave, the transmitters of all pilots will be checked that they are at 25mw.
In case of video problems or interference, the VTX output power of all drones will be checked to make sure they are at 25mw.

- Event timing will be strict. A race will last two minutes and there will be a two minute turnover time. If you have technical difficulties and are not able to lift off at the start of the race, then you must leave the track with your aircraft and forfeit the round

- Each pilot will be the spotter for the preceding race. As a heat is putting their quads out, the next heat needs to come to the pilot area. Spotters need to be on time. Failure to be ready in the pilot area at the start of the race before yours means you will miss your heat.

- Please land your aircraft in the designated landing zone as quickly and safely as possible after your race is over so that we can prepare for the next race.

- Please retrieve your aircraft after each race and power it off as quickly as possible

- Competitors that do not return for a missed obstacle will have their round voided.

- Competitors who gain advantage through a jumped start must forfeit that advantage immediately by waiting off the racing line and rejoining the race once all other competitors have taken off. (and only when it is safe to do so).

- Turtle mode and launch control are allowed, given that competitors are not obstructed and that your maneuver will not damage the track or cabling.

- Please keep race control and the pilot stations clear of distractions so that the race director can see and hear everything that is happening, and can communicate with the pilots when necessary.

● Pilots must remain composed when in the pilot area so as not to distract the other Pilots

● Fly outside of the netting or outside on the grounds and you and anyone in your presence will be immediately disqualified from the competition.

● Failure to comply with safety rules on or off the track will result in instant disqualification.

● We may spot-check power output with an ImmersionRC Power Meter V2. Any competitor found to be transmitting at a power level of more than 25mw will be disqualified.

● Any competitor found to be bleeding over to another competitor's video will be asked to check their power output, and may have to forfeit their round.

● Please familiarize yourself with setting your VTX to any of the race frequencies and expect to be asked to change between each stage. Failure to be on the correct frequency at the correct time means you will not fly.

● Please do NOT power up any video transmitters unless you are racing.

● Any competitor found causing another competitor to lose video through negligence or willful sabotage (including use of the wrong frequency or exceeding power output levels) will be disqualified from the competition

● There will be no restarts for mid-air collisions for the main part of the competition. If you have video issues then we need to see corresponding evidence on our recording equipment before we can consider a re-run.

● Remember we are at an indoor venue so do not expect fantastic video. Ground stations will NOT be provided

● During the final we will allow a maximum of 1 re-run per race due to midair collision before or in the start gate.

● The track is strictly off-limits unless a member of race control explicitly declares it safe to enter.

● Please charge your batteries in the designated charging area only and follow all safety precautions.

● Please respect the pit area, keep it clean and tidy, do not take up too much space.

● Do not leave any waste anywhere.