



# EMERGENCY PROCEDURES

VLOS | DJI | Single Drone | 01-02-2025 07:23

## Emergency Procedures

**Aircraft close: Activate kill switch:** This will make the drone fall out of the sky.

**Threatening wildlife: Get in car, RTH:** Get in the car first, keeping the controller outside if possible. Then, RTH.

**Operational volume breached: Kill switch, call ATC:** Activate kill switch and communicate with ATC (+254 798 984 005). Inform ATC of your situation, drone size, location, direction, height, speed, and remaining battery.

**Loss of control/fly-away: Try control, kill switch, call ATC:** Try regaining control by lifting the controller overhead and orienting the antenna towards the UAS. If unsuccessful, activate kill switch and call ATC (+254 798 984 005). Share your situation, drone size, location, direction, height, speed, and remaining battery.

**Bush fire: Call radio room:** Call the radio room at +254 723 312 673.

**Crew unfit: RTH, first aid, call radio room:** RTH and provide first aid. Call the radio room at +254 723 312 673. Keep calm and communicate clearly.



# CONTINGENCY PROCEDURES

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## Contingency Procedures

**Low battery/high drain: RTH or land:** Check battery level. If sufficient, Return to Home (RTH). If not, land the drone slowly. If close to home, perform a manual landing.

**High-wind: Lower altitude, RTH or land:** Lower drone altitude. If possible, RTH. If not, land the drone slowly. If the drone exits flight geometry, follow Emergency E03.

**Aircraft approaching: Lower altitude:** Lower the drone to a safe altitude (below 30m AGL).

**Wildlife approaching: RTH, get in car:** RTH and get in the car. Keep the controller outside the car to maintain control.

**UAV warnings/errors: RTH or land:** If possible, RTH. If not, land the drone slowly.

**Communication link issues: Orient antenna, RTH:** Lift the controller overhead and orient the antenna towards the UAS. RTH. Consider driving towards the UAS.

**Poor weather: RTH:** RTH in case of rain, wind, or poor visibility.

**Crew unwell: RTH:** RTH. Keep calm and communicate clearly.

**3rd party approaching: Avoid overflying, assistant pilot to communicate and avoid distraction:** Avoid overflying the 3rd party, assistant communicates to avoid distracting the RPIC.



# FIRST FLIGHT

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## GoPro

**Verify GoPro battery level, available recording time, and camera settings:** Configure the camera to 1080p at 25 fps with a visible timestamp.

**Begin GoPro recording and announce operation details:** Mount the GoPro on the pilot's head, angled toward the controller. Clearly state the operation number, flight number, date, time, crew roles, and mission objective.

## Operational Environment

**Assess environment (airspace and topography):** Review no-fly zones, NOTAMs, and topographic hazards.

**Identify direction of north:** Use a compass or suitable tool to find north.

## Safety Briefing

**Check crew roles, safety vests, and ensure team is behind the pilot:** Confirm the team is wearing safety vests, understands roles, and remains at a safe distance behind the pilot.

**Assign evacuation car seats:** Ensure each evacuation car seat is allocated and free of clutter in case of an emergency.

**Confirm 'IMSAFE' readiness:** Ensure no team member is suffering from Illness, Medication, Stress, Alcohol, Fatigue, or Emotion (IMSAFE).

**Review contingency and emergency procedures:** Make certain the pilot and assistant pilot are fully confident with contingency actions and emergency protocols.

## Equipment

**Position the landing mat away from the pilot:** Place the landing pad at a safe distance to minimize risk and ensure clear takeoffs and landings.

**Conduct UAS inspection:** Check for cracks, damage, or loose components. Ensure propellers rotate smoothly with no visible defects.

**Power on the UAS, check failsafes, and confirm controller mode:** Set failsafes: RTH (Return to Home), RTH altitude, max distance, max altitude, and confirm the controller

mode (e.g., Mode 1 or 2).



# PRE-FLIGHT

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## GoPro

**Verify GoPro battery, remaining time, and settings:** Ensure the GoPro has sufficient battery and video time for the operation. Set it to 1080p 25fps with timestamp.

**Start GoPro recording and announce operation details:** Begin recording with the GoPro mounted on the pilot's head, aimed at the controller. Announce: operation number, flight number, date, time, crew roles, and mission objective.

## Environment

**Assess weather conditions:** Pilot evaluates weather safety: no high winds, good visibility, no incoming rain, no low clouds.

**Confirm mission plan and brief team:** Discuss the flight path, waypoints, and areas of interest with the team.

## Equipment

**Insert a new SD card:** Insert a new SD card into the drone.

**Check remaining battery, swap if needed.:** Verify the remaining battery for both the UAS and the controller.

**Power on UAS, check for errors, GPS fix, and RSSI strength:** Check for errors (e.g., calibration). Ensure GPS fix (at least 6 satellites) and strong RSSI.

## Final Checks

**Team go/no-go decision:** Team agrees to proceed: no ground risks (wildlife, uninvolved people), no air risks (drones, aircraft), and team is IMSAFE.

**Announce 'TAKING-OFF', then take off and move away from pilot:** Maintain a 1:1 height-distance ratio during take-off.

**Verify flight performance away from pilot:** Ensure UAS is at a safe distance. Fly forward, backward, left, right, and verify expected behavior.



# IN-FLIGHT

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## Flight Operations

**(Optional) Upload waypoint mission:** Upload the waypoint mission to the drone.

**(Optional) Start recording:** Start recording the flight.

**Monitor weather conditions:** Continuously monitor weather conditions (wind, rain, visibility) during the flight.

**Monitor UAS status:** Monitor UAS parameters: battery, RSSI, GPS, altitude, distance, speed.

**Monitor transmitter battery:** Check the remaining battery on the transmitter.

**Monitor air traffic:** Continuously monitor air traffic on frequency 124.3 MHz and FlightRadar24.

**Announce before landing:** Inform everyone in the operational area before landing.



# POST-FLIGHT

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## Post-Flight Operations

**(Optional) Stop on-board recording:** Stop the on-board recording after landing.

**Remove batteries and SD card:** Remove the battery and the SD card from the drone.

**Inspect UAS:** Check for cracks and damage. Ensure propellers spin smoothly.

**Stop GoPro recording:** Stop the GoPro recording after landing.

**Notify ATC if operations are complete:** Inform ATC that operations are done if no more flights are planned.



# OPERATION PLANNING

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## Operational Environment

**Verify Airspace and Topography:** Check for no-fly zones and NOTAMs. Assess the topography for ground obstacles and airspace visibility.

**Review Weather Forecast:** Use [droneweather.xyz](https://droneweather.xyz) to check the temperature (-10° to 40° C), wind speed (< 10 m/s), rain (up to light drizzle), visibility (more than 5km), and Kp-index (max 5).

## Crew

**Confirm Pilot Certification:** Ensure the pilot holds a valid drone certificate.

**Schedule Pilot Assistant:** Book an assistant for situational awareness (air, ground, wildlife).

**Agree on Mission Plan and Generate Checklist:** Discuss the flight path, waypoints, and areas of interest with the team. Generate the corresponding checklist on WildOps ([wilddrone.droneweb.dk](https://wilddrone.droneweb.dk)).

## Regulations

## Equipment

**Inspect Drone and Equipment:** Check the drone for cracks and smooth motor operation. Verify the transmitter, ensure SD cards are empty and ready for logging, and check battery levels (drone, transmitter, GoPro).

**Pack All Equipment:** Ensure all items on the equipment list are packed and ready for the operation.





# PRE-OPERATION

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## 3rd Parties

**Notify ATC / Get Approval from David / Verify Approval on WildOps:** Call ATC at +254 798 984 005. Provide details of the operation type (VLOS/BVLOS), location (Ol Pejeta), height (400ft/120m AGL), and times. During the hackathon, ATC is centralized; talk to David.

**Notify Radio Room:** Call the Radio Room at +254 723 312 673. Provide planned locations (using patrol blocks) and times.

## Operational Environment

**Review Weather Forecast:** Check the weather forecast on [droneweather.xyz](https://droneweather.xyz). Ensure temperature is between -10° to 40° C, wind speed is less than 10 m/s, rain is up to light drizzle, visibility is more than 5km, and Kp-index is a maximum of 5.

## Crew

**Assign Crew Roles:** Ensure the crew is aware of their roles and responsibilities.

## Packing

**Complete Packing Checklist:** Ensure all items on the packing checklist are packed and ready.



# PACKING

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## UAS Operation

**Correct Mission Checklist:** Ensure the checklist corresponds to your mission by checking the top banner. If it is not, generate a new one on WildOps ([wilddrone.droneweb.dk](http://wilddrone.droneweb.dk)).

**UAS, Spare UAS, and Controller (with maps downloaded offline):** Ensure the UAS and its controller are packed, and that the offline maps are downloaded on the controller.

**Charged UAS Batteries, and spare batteries:** Ensure the UAS batteries are charged and packed.

**Empty SD Cards for UAS:** Ensure empty SD cards for the UAS are packed.

**GoPro and Accessories:** Ensure the GoPro, its battery, spare batteries, and empty SD card are packed.

**Safety Vests (2):** Ensure that 2 safety vests are packed (for pilot and assistant pilot).

## Personal

**Water:** Ensure water is packed.

**Hat and Sunglasses:** Ensure a hat and sunglasses are packed.

**Sunscreen and Mosquito Repellent:** Ensure sunscreen and mosquito repellent are packed.

**Charged Phone and Power Bank:** Ensure a charged phone and power bank are packed.

## Car

**Reserve Water:** Ensure reserve water is packed in the car.

**First Aid Kit and Snake Bite Kit:** Ensure both kits are packed in the car.

**Binoculars:** Ensure binoculars are packed in the car.



# POST-OPERATION

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## Post-Operation Tasks

**Notify ATC and Ol Pejeta comms room:** Inform ATC and Ol Pejeta comms room after the operation.

**Backup and format SD cards:** Backup SD cards on 2 drives (personal & Ela's) using the naming convention (2025MMDD\_WDXX\_N\_Pilot). Then, format the SD cards.

**Recharge or storage charge batteries:** Recharge or storage charge the batteries after the operation.

**Document the flight:** Record the flight details in the Drone Logbook and KFL flight logs.

**Report incidents or accidents:** Record and report any incidents or accidents.