DR CITY

AIRCRAFT OPERATIONAL PROCEDURES MEMORANDA (OPM) FLIGHT MANUAL

COMMERCIAL AERIAL DRONE
RPAS OPERATOR
TP15263

Latest Revision 02-05-2025

Government of Canada | Gouvernement du Canada

To Drone Enthusiasts and Professionals,

Flying a drone isn't just about takeoff and landing—it comes with responsibilities. Logging your flights isn't optional; it's a requirement by Transport Canada to ensure compliance with aviation safety standards. Keeping proper records helps track aircraft performance, ensures accountability and supports regulatory compliance.

This manual has been carefully designed to align with TP15263 regulations, which set the knowledge requirements for RPAS (Remotely Piloted Aircraft Systems) pilots operating within Visual Line of Sight (VLOS). You can review the full details here:
https://tc.canada.ca/en/aviation/publications/knowledge-requirements-pilots-remotely-piloted-aircraft-systems-250-g-including-25-kg-operating-within-visual-line-sight-vlos-tp-15263

At DROCITY, we are a self-declared registered RPAS Flight School, committed to equipping drone pilots with the right knowledge and training.

For an official list of Transport Canada-approved flight schools, visit:
https://tc.canada.ca/en/aviation/drone-safety/drone-pilot-licensing/find-drone-flight-school

Yours Truly
DROCITY

Aircraft Maintenance, Repairs, Updates, and Documentation

Ensuring the aircraft remains in optimal condition is a fundamental duty of the pilot or owner. This document is formatted for flexible use and should be stored in a binder or secured with a clip (e.g., bull clip), making it easy to insert additional pages as maintenance activities and updates are recorded.

Regulations on Aircraft Maintenance and Records

Transport Canada mandates that pilots keep detailed records of flights and aircraft maintenance. This includes documenting updates, recalls, and software revisions. Additionally, this manual must be kept with you during operations and be available for inspection on-site.

Emergency Contingency Plan

In the event of a fly-away, crash, near-miss with another aircraft, or hard landing, the following procedures must be followed. To ensure swift notification to Transport Canada, the pilot should be familiar with the project location in decimal degrees.

○ Fly-away Procedures

A fly-away happens when the pilot loses control of the Remotely Piloted Aircraft System (RPAS), causing the Remotely Piloted Aircraft (RPA) to leave the project area either vertically or horizontally. The procedures for regaining control will vary depending on the specific RPAS.

○ Procedure to activate 'RTH' (Return to Home)

1. Press the "RTH – Return to Home" button on the controller to attempt commanding the drone to return to the site.
2. If the home button is ineffective, the pilot will try to regain manual control of the drone and fly it back to the site.

If successful, the pilot will immediately land the RPA and cease all operations until the issue is resolved.
If the pilot is unable to regain control, emergency procedures will be activated as follows:

○ Fly-away noted Information

1. Provide the estimated battery life, direction of flight, potential range, and any affected aerodromes. Include the RPA model, weight, range, and color.
2. Contact the nearest local controlled aerodrome using the Canadian Flight Supplement.

○ Crash Procedures & Analysis

In the event of an RPA crash, follow these steps:

1. Turn off the controller and deactivate the RPAS to prevent further damage or injury.
2. Check for any injuries and, if present, follow standard first aid procedures.
   a. Ensure the area is secure and safe.
   b. Call emergency services (911) and provide medical aid if necessary.
3. Evaluate whether the RPA has caused any damage to vehicles, buildings, powerlines, or infrastructure. Ensure there is no ongoing risk of further damage or danger.
4. Once it is safe to do so, document the following:
   a. Time of the incident.
   b. Weather conditions.
   c. Events leading up to the crash.
   d. Photos of any damage.

5. Record the incident in the incident tracker and attach all relevant documentation to the incident report, including:
   a. Pilot's record of the incident.
   b. OHS report.
   c. Photos of the damage (if applicable).

Safety & Security Plan

All Pilots and Ground Supervisors listed on the Special Flight Operations Certificate (SFOC) must have a thorough understanding of airspace classification and structure, weather conditions, Notice to Airmen (NOTAM) reporting services, VTA and VNC charts, the Canadian Flight Supplement (which must be kept in an emergency backpack along with a First Aid kit and fire extinguisher), and the relevant sections of the Canadian Aviation Regulations (CARs), particularly sections 602.01, 602.07, 602.11, 602.21, and 602.4.

NOTAM Filing Requirements: A NOTAM must always be filed for any RPAS operation within 5 nautical miles (NM) of an aerodrome or within Class C, D, E, or F airspace.

RPAS Operations Area: The operational area should be clearly defined, including:

1. The area of operation (latitude/longitude coordinates).
2. Planned operational altitudes (in feet above ground level).
3. RPAS specifics: model, size, weight, and color.
4. Date and time of the operation.
5. User contact information.

General Safety Procedures: RPAS operations must prioritize the safety of people, property on the ground, and other airspace users. The following safety procedures must be reviewed before each flight:

1. RPAS users must adhere to Transport Canada regulations at all times.
2. RPAS operations must comply with all applicable Canadian laws, including the Privacy Act, the Criminal Code, and any relevant provincial, territorial, and municipal regulations.
3. RPAS operations are restricted to authorized personnel only. The SFOC Certificate Holder/Pilot is responsible for determining who may participate in the operation and is accountable for their actions.
4. The following items must always be available during operations:
   - RPAS Directive
   - SFOC (Special Flight Operations Certificate)
   - Proof of liability insurance
   - Very high frequency (VHF) air band transceiver
   - RPAS user contact information
   - Maps/charts
   - Aircraft system limitations (user manual)
   - Communication equipment (cell phone, satellite radio)
   - Fire extinguisher
5. RPAS Lithium Polymer (LiPo) batteries must be transported according to the Dangerous Goods Transportation and Handling Act. Ensure that each battery is separated from metal objects, with terminals insulated using electrical tape or other non-conductive materials to prevent short circuits.

Operational Safety Measures:

1. RPAS users must follow all responsibilities outlined in section 6.0 of the Safety & Security Plan.
2. To mitigate the risks associated with signal loss or GPS loss, the following steps must be taken:
   - Calibrate the RPAS compass before each flight.
   - Ensure the battery level is above 90% (or the required level) before takeoff.

- Ensure GPS lock is obtained, and the home point is established.
- Confirm that the mission is within the RPAS's operational specifications.
- Plan the flight to complete with at least 30% battery power remaining.

3. RPAs not in use must be securely stored (e.g., in a Pelican case or a flammable cabinet).

By adhering to these regulations and safety measures, RPAS operations can be conducted safely and in full compliance with Canadian aviation laws.

RPAS Maintenance

The type of maintenance required for an RPAS depends on the model and the manufacturer's recommendations. The pilot and/or owner of the RPAS should follow these guidelines:

1. Never open the body of the RPAS or perform any maintenance not specified in the RPAS's user manual.
2. Adhere to the manufacturer's recommended maintenance schedules and storage guidelines.
3. Inspect the RPA before and after each flight for any visible signs of damage, paying particular attention to the rotors.
4. Immediately replace any damaged rotors and dispose of them properly.
5. Regularly perform firmware upgrades. Ensure that:
   a. The craft is fully updated before operational flights.
   b. The controller and batteries are updated simultaneously.
   c. After any updates, conduct a test flight to confirm that the update was successful and there are no conflicts between the RPA, batteries, and controller.

Incident Reporting

Incident reporting is crucial for maintaining a safe and legally compliant RPAS program. It not only helps ensure legal compliance but also provides a system to track issues that could impact the performance and reliability of a specific RPAS. Reporting incidents also helps the Flight Operations Center (FOC) identify potential training gaps and offers a method to address them. Furthermore, federal law mandates that a pilot must cease operations following any of the incidents listed below until the cause is determined, and corrective actions are taken to prevent recurrence:

1. Any injury to a person that requires medical attention.
2. Unintended contact between the unmanned aircraft and individuals, animals, vehicles, vessels, buildings, or structures.
3. Unexpected damage to the airframe, control station, payload, or command and control links that negatively affects the RPAS's performance or flight characteristics.
4. Instances where the unmanned aircraft strays beyond its designated lateral boundaries or altitude limits.
5. Any collision with or loss of separation from another aircraft.
6. If the unmanned aircraft becomes uncontrollable, experiences a fly-away, or goes missing.
7. Any incident not covered in items (a) to (f) that requires a Canadian Aviation Daily Occurrence Report.

If there is any interference from individuals that threatens the safety of the flight (whether through direct interference with the crew or the aircraft), the crew will notify the FOC and suspend operations until the issue is resolved.
Internal incidents are reported via an online form, which immediately alerts the FOC. If the incident results in damage to property or injury to the public, the involved RPA will be grounded until the internal investigation is concluded and, if necessary, approval is obtained from the FOC. The responsibility for submitting incident reports to the FOC lies with the Special Flight Operations Certificate (SFOC) Pilot in command.

Equipment Check List

- ❑ RPAS unit
- ❑ Batteries and charger
- ❑ Controller
- ❑ Tablet or laptop as required
- ❑ Anemometer (if available)
- ❑ Spare Propellers
- ❑ Apple Lightning Cable
- ❑ SD cards
- ❑ SD Card Reader
- ❑ Tablet sunshade
- ❑ Hazard Assessment and Safety Emergency Plan
- ❑ Documents
- ❑ Procedure
- ❑ SFOC
- ❑ RPAS exemptions, (if applicable)
- ❑ Proof of liability insurance
- ❑ Pilot contact information
- ❑ CFS VNC/VTA (Chart Supplments)
- ❑ Aircraft system limitations (user manual)
- ❑ Sunglasses
- ❑ High-Visibility Vest

Post Flight check list

- ❑ Post-flight hardware check (rotors, batteries, motors, and control system). Any defective parts or control issues must be reported to the FOC via the online maintenance log.
- ❑ Charge or discharge (for storage) batteries, controller, and peripheral devices for next operation.
- ❑ Record flight log, aerial imagery, and incident reporting.
- ❑ Complete flight logbook entry including Pilot/co-Pilot, RPA serial number, weather, date, time, duration, and location.
- ❑ To avoid fire, serious injury, and property damage, observe the Battery Safety Guidelines outlined by the manufacturer.
- ❑ Maintain the Pilot log.
- ❑ Record flights in the online Flight log/Tracker or as indicated in the manufacturer's software.
- ❑ Inform the FOC of flight completion and of any incidents related to the flight.
- ❑ Report any post flight damage or malfunctions to the manufacturer if required.

AIRCRAFT ACTIVITY REPORT

ACTIVITY _____ **DATED** _____

AIRCRAFT MODEL _____ **REG#** _____

PILOT _____ **OWNER** _____ **MANUFACTURER** _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

I certify this aircraft is airworthy and that the work performed by:

TECH MAINTENANCE _____

INITIALS _____

DATE _____

PILOT FLIGHT SIGN OFF,

INITIALS _____

DATE _____