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Flight Medic Manual

Commercial Aerial Drone Pilot TP15263



FLIGHT MEDIC



FLIGHT MEDIC MANUAL

MED.011-1

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Remotely Piloted Aircraft Systems



1st SQUADRONE

-Forever Flying Forward-

Latest Revision 12-18-2020



DO YOU REQUIRE ASSISTANCE?



Drones are powerful and intimidating tools, people don't instinctively trust drones, not knowing or understanding who is in command or purpose of the aircrafts presence.

Understanding how others percieve the encounter is important to a successful outcome and your ability to provide the care required.

Medical Station

This manual will guide you in preparing a basic frst aid response station in the case of a emergency, or medical situation arises. The medic has an important role in ensuring the operation goes off safely and if any unforeseen medical emergencies arise every contingency has been considered and provided for with the correct supplies and first aid procedures.

This manual is not a substitute for state approved first aid certification or medical training.

The medical manual lists the supplies in the Medic Checklist and documents

first aid practices and procedures for use in the case of an emergency.

And the medical supplies required on hand during operations.

A medical kit will require preparing, a list of medical supplies required to be stocked should be included in your medical checklists. The medical supplies you choose will reflect your scope of practice and level of training.

The 1st Squadrone Service Wings are worn by those that provide services to 1st SQUADRONE trained Pilots and others that may require medical services, as the medic designate, you may wear the 1st Service Wings as well as the 1st Flight Medic Wings.



1st SQUADRONE ~ Air Service Wings

Develop a contact sheet of parties to be contacted and resources available in the case of an actual emergency, these items are in your OPM, however in this course we will together set up a medical emergency contingency operations and procedures manual, this manual may serve that purpose once you have filled out the relevant contacts and checklists.

The EMERGENCY SERVICES Checklist is the form you fill out to add to the pre-flight planning itinerary. because locals change this form will need to be confirmed the relevant resources still apply.

This guide provides a quick FIRST AID reference to existing first aid protocols as well as a check list for safety, prevention and procedures

required and prescribed in TP15263 Transport Canada Section IX CARs of the Canadian Aviation Regulations.

This Manual has a user specified CONTACTS in case of EMERGENCY local responder contacts as well as other safety and security related details required of the PIC Pilot in Charge.

A new generation of pilots navigating the exciting future of aerodrones and aerospace. I wish you all the success in your undertaking to be one of the best in our program, a 1st Squadrone Pilot, and then take off as a Flight Reviewer, and Flight Instructor for those with the right stuff the sky is the limit. This manual is drafted to be compliant with TP15263 regulations: <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>



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1st Squadrone is a self declared registered RPAS Flight School with transport Canada listing of approved programs is here:

<https://tc.canada.ca/en/aviation/drone-safety/find-drone-flight-school>

Yours Truly

KR Parks, M.Sc.



The Aerial Drone Medic | Flight Paramedic

The first duty as flight medic or paramedic (or medical professional depending on training) as the designated medical officer/responder, YOU are responsible for the administering of medical first aid in the case of an emergency.

You are also (as well as the PIC) responsible for determining the personnel are 'fit for flight', health and safety of the Pilot, co-pilot, crew, operations ground crew and commercial interested passengers are all depending on you.

Individuals (consenting parties or clients) are while personnel subject to sudden injury or trauma are still under the command of the PIC Pilot in Charge you are responsible to notify the captain if you feel anyone is unfit for duty due to drugs, alcohol, or fatigue or requires medical evacuation, or psychological care.



1st SQUADRONE MEDICAL CORE

Aerial drones have been compared to flying chainsaws, however if you had to you could run away from a chainsaw.

A drone incident can be serious and even fatal, it is important you prepare for incidents that may occur from unexpected encounters with drones and prop blades including any other acute traumas, including head and brain injury.

As well as trauma there are medical conditions that may arise among crew and *passengers, a possible stroke or heart attack requires flight operation cessation and attention to the medical situation.



The Flight Medic | First Aid + First Responder

The aerial drone medic pilot for first responders. Is a course for pilots that fly mission of a medical facility or provide flight medic medical assistance in case of a medical emergency.

During search and rescue operations, It may be that your aircraft is the first to find an individual injured or in need of medical assistance

There are options for assistance that can be provided, payload of light packages of medications, food, exposure protection etc. can be dropped.

As well with aerial drones equipped with communications and GPS or RDK satellite locations can be established and or devices dropped ie a light vhf radio.

The flight medic should possess a basic proficiency in health and safety, as well as practical knowledge. The most important factor in passing and success as a pilot is safety, because a safety violation may be grounds for failing but in real life could be much more serious. So lets review safety considerations:



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TRANSPORT CANADA DRONE SAFETY

<https://tc.canada.ca/en/aviation/drone-safety>

A directory of online resources is available to drone pilots at Transport Canada for various duties of a pilot and aircraft system owner.

Choosing the right Drone, Transport Canada must first approve a manufactured or permitted

experimental aircraft for SFOCs (Special Flight Operations Permit) If you plan to include a Search and Rescue Aircraft to your Aerial Drone fleet or services provide you will need to confirm the model is approved by Transport Canada for the proposed operation.

<https://tc.canada.ca/en/aviation/drone-safety/choosing-right-drone#approved>

Flight Medic Operations and Procedures

Division III General operating and flight rules

Before flight please review the regulations below:

Knowledge requirements for Visual line of sight operations

901.11 Visual line-of-sight

901.12 Prohibition—emergency security perimeter

901.13 Prohibition—Canadian domestic airspace

901.14 Prohibition—airspace

901.15 Inadvertent entry into controlled airspace

901.16 Flight safety

901.17 Right of way

901.18 Avoidance of collision

901.19 Fitness of crew members

901.20 Visual observers

901.21 Compliance with instructions

901.22 Living creatures

901.23 Procedures

901.24 Pre-flight information

901.25 Maximum altitude

901.26 Horizontal distance

901.27 Site survey

901.28 Other pre-flight requirements

901.29 Serviceability of the remotely piloted aircraft system

901.30 Availability of remotely piloted aircraft system operating manual

901.31 Manufacturer's instructions

901.32 Control of remotely piloted aircraft systems

901.33 Take-offs, launches, approaches, landings and recovery

901.34 Minimum weather conditions

901.35 Icing

901.36 Formation flight

901.37 Prohibition—operation of moving vehicles, vessels and manned aircraft

901.38 Use of first-person view devices

901.39 Night flight requirements

901.40 Multiple remotely piloted aircraft

901.41 Special aviation events and advertised events

901.42 Handovers

901.43 Payloads

901.44 Flight termination system

901.45 ELT

901.46 Transponder and automatic pressure-altitude reporting equipment

901.47 Operations at or in the vicinity of an aerodrome, airport or heliport

901.48 Records

901.49 Incidents and accidents—associated measures

Lesson 8 - Human factors & Aviation physiology

Section 3:

1. Vision/visual scanning techniques
2. Hearing
3. Orientation/disorientation (including visual/perspective/parallax illusions)
4. Body rhythms/jet lag
5. Sleep/fatigue
6. Anaesthetics

The small RPAS pilot operating within visual line of sight must be able to:

Describe good scanning techniques (visual, audio) for visual observers (conflicting aircraft).

Describe “perspective illusion” when looking at distant aircraft.

Describe factors that affect alertness.

The pilot and the operating environment

- 1. Medications (prescribed and over-the-counter)**
- 2. Substance abuse (alcohol/drugs)**
- 3. Heat/cold**
- 4. Noise**
- 5. Toxic hazards (including carbon monoxide– GCS vehicle)**

The small RPAS pilot operating within visual line of sight must be able to:

Describe the effects of a hangover on pilot performance.

Describe the effects of exposure to cold and excessive heat on pilot performance.

Describe the symptoms of carbon monoxide poisoning.

Sky scanning is an important skill to enhance situational awareness, the technique is to scan

back and forth for any aircraft or possible threats to operations.



In the advanced flight review you will be assessed on your ability to scan the sky continuously to the satisfaction of the reviewer you are aware of the sky, the ground, people, dogs or birds, aircraft or any other conditions you should be aware of.

Lesson 9 - Aviation psychology

1. Factors that influence decision-making
2. Situational awareness
3. Stress
4. Managing risk
5. Attitudes
6. Workload—attention and information processing

The small RPAS pilot operating within visual line of sight must be able to:

List factors that interfere with effective decision-making.

List the factors that affect situational awareness.

Describe how a given operational risk might be managed.

Lesson 10 - Pilot—equipment/materials relationship

1. Controls and displays—errors in interpretation and control
2. Standard operating procedures—rationale/benefits
3. Correct use of check-lists and manuals
4. Automation and complacency

The small RPAS pilot operating within visual line of sight must be able to:

Explain the benefits of standard operating procedures and lessons learned.

Explain how to manage an interruption to a checklist.



Lesson 11 - Interpersonal relations

1. Communications with flight crew/air traffic services/customers/public/authorities
2. Operating pressures—family relationships/peer group
3. Operating pressures—employer

The small RPAS pilot operating within visual line of sight must be able to:

Resolve differences peacefully.

Promote open communications.

Place safety requirements over hierarchy/position in organization/politics.

The page about aircraft that qualify is here:

<https://tc.canada.ca/en/aviation/drone-safety/choosing-right-drone>

or the List of Drones approved for SFOCs:

Flight planning

Flight planning - Knowledge requirements for Visual line of sight operations

1. Factors affecting choice of flying area
2. NOTAM
3. Use of Canada Flight Supplement (CFS)
4. Fuel/energy requirements
5. Weight and balance
- 6. Documents to be available at ground control station**
7. Aircraft serviceability, configuration
8. Effect of wind on range and endurance

The small RPAS pilot operating within visual line of sight must be able to:



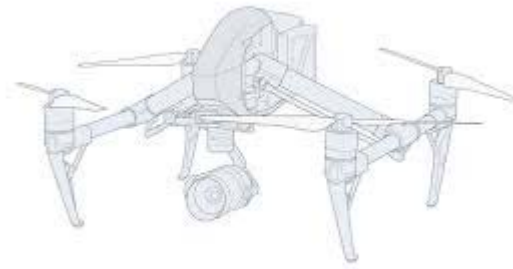
Describe the factors that will influence your choice of flying area (restricted airspace,

NOTAMs, Notice to Airmen

Demonstrate how to use the CFS to determine type and radius of airspace, frequencies, aerodrome operator contact information, nearest FIC / ATS unit for emergency contact, etc.

Determine the contact information for Emergency Services and local authorities.

List the documents that must be available at the ground control station.



Lesson 20 - RPAS operations (VLOS)

Knowledge requirements for Visual line of sight operations

1. Land owner authorizations
- 2. Coordination with public safety (municipality)**
3. Charging areas
4. Site control, safety perimeter
5. Launch points, recovery points
6. Obstacles
- 7. Emergency procedures**
- 8. Defining roles and responsibilities**
- 9. Communications**
- 10. Post flight actions (download data, safety actions, etc.)**

BVLOS is Beyond visual line of sight and is prohibited without SFOC authorization for an advanced operations pilot and approved Transport Canada registered drone. If you lose visual line of sight without a visual observer, you will fail.

List the typical items in a crew briefing. (roles, objective and plan, timeline, performance limitations, emergency procedures, airspace conflicts and escape manoeuvres, flyaways, public interference, recovery area, interface with the client and public, site manager, safe areas, expectations of what they will observe, electro-magnetic interference, “clean cockpit” (no interference of distractions)).

List recommended post-flight actions (download data, check for damage, clean and dry as needed, remove batteries, record information into logs, disassemble and pack per system manual, etc.).



Lesson 21 - Occupational safety and health

Knowledge requirements for Safety in Visual line of sight operations

1. Charging areas
2. Launch points, recovery points
3. Obstacles
- 4. Emergency procedures**
- 5. Responsibilities**
- 6. Communications**
- 7. Post-flight actions**

The small RPAS pilot operating within visual line of sight must be able to:

List the safety equipment necessary for the operation (fire extinguishers, first aid kit, etc.).

Assess weather threats vs ground station operations.

Identify and evaluate access routes.

Assess public access and determine crowd control requirements.

List typical emergency contacts appropriate to flying site (flyaways, EMS etc.)

Identify legal site access issues (trespass, insurance, permissions, safety training).

List typical personal safety equipment.

Describe the hazards of launchers and recovery systems.

Lesson 25 - Pre-flight planning procedures

Plan a flight of at least 15 minutes duration simulating a normal operational sRPAS flight which shall, at a minimum, include one (1) take-off and one (1) full stop landing.

The small RPAS pilot operating within visual line of sight must be able to:

Provide a satisfactory site survey;

Brief flight crew or visual observers of any duties they are to perform or any other information relevant to the flight;

Use appropriate and current aeronautical charts and other current flight publications;

Properly identify airspace, obstructions, and terrain features;

Select a safe and efficient take-off location and flight route;

Obtain all pertinent information about local air routes and aerodromes;

Retrieve and interpret weather information and NOTAM relevant to the intended flight;

Determine the acceptability of existing or forecast weather conditions;

Select the most favourable and appropriate altitudes, considering weather conditions and equipment limitations;

Determine the appropriate departure procedure;

Make a competent “GO/NO-GO” decision based on available information for the flight;

Demonstrate that the weights and center of gravity are within acceptable manufactures limits;

Determine the impact on their sRPAS operations, of unserviceability of equipment or equipment configuration changes for the proposed flight; and

Organize and arrange material and equipment in a manner that makes the items readily available.

Lesson 26 - Emergency procedures

Knowledge requirements for Visual line of sight operations

Demonstrate the procedures to be used when an emergency occurs.

The small RPAS pilot operating within visual line of sight must be able to:

Describe emergency procedures that apply to your sRPAS;

Describe the lost-link procedures that apply to your sRPAS;

Describe the procedures to follow in the event of a fly-away, including who to contact.



RPAS Resources:

Remotely Piloted Aircraft Section:

<https://www.tc.gc.ca/ca-publications/...>

Transport Canada Drone Law

<https://www.tc.gc.ca/en/services/avia...>

Transport Canada Aeronautical Information Manual

<https://www.tc.gc.ca/eng/civilaviatio...>

Canadian Aviation Regulations

<https://www.tc.gc.ca/eng/acts-regulat...>

Study Guide for the Restricted Operator Certificate With Aeronautical Qualification

<https://www.ic.gc.ca/eic/site/smt-gst...>

Canada Civil Aviation Abbreviations and Acronyms

<https://www.tc.gc.ca/eng/civilaviatio...>

Human Factors Brochure

<http://www.tc.gc.ca/eng/civilaviation...>

Recommended & additional study material

Transport Canada publications (TP), including the following, may be purchased from retailers, or at the following web site: <http://www.tc.gc.ca/eng/civilaviation/publications/menu.htm>.

Human Factors for Aviation - Basic Handbook (TP 12863), and Advanced Handbook (TP 12864)

Transport Canada Aeronautical Information Manual (TC AIM) (TP 14371)

<http://www.tc.gc.ca/eng/civilaviation/publications/tp14371-menu-3092.htm>

The Study Guide for the Radiotelephone Restricted Operator Certificate - Aeronautical (RIC) is available free of charge from district offices of Industry Canada - Examinations and Radio Licensing (<http://www.strategis.gc.ca>).

Canadian Aviation Regulations (CARs) are available online at:

<http://laws-lois.justice.gc.ca/eng/regulations/SOR-96-433/index.html>

NAV CANADA publications, including the following, may be purchased from retailers, or at the following web site:

<http://www.navcanada.ca/EN/products-and-services/Pages/aeronautical-information-products.aspx>

VFR Navigation Charts (VNC)/ VFR Terminal Area Charts (VTA)

Canada Flight Supplement

The NAV CANADA VFR Phraseology guide is available for download at

<https://www.navcanada.ca/EN/media/Publications/VFR%20Phraseology.pdf>

Information on the Transportation of Dangerous Goods is available from Transport Canada.

<http://www.tc.gc.ca/eng/tdg/safety-menu.htm>

Text books and other publications produced by commercial publishers can be obtained through local flying training organization, bookstores and similar sources.



Medical Operations and Procedures

Commercial Operations RPAS Aerial Drone Pilots SFOC.OPS

Introduction to Operations RPAS

This is a OPM that has been written to conform to the regulations, and provides you with a template to produce your own.

The procedures related to your industry, aircraft and operations will vary, and therefore you are responsible to include operational documentation of aircraft, manufacturer's recommendations AND checklists required for your flight program, crew, operations and aircrafts.

Remotely Piloted Aircrafts (RPAs) are drone aircraft, other than model aircraft, that are designed to fly. RPAs are small, often battery powered, fixed-wing, or rotor-blade craft.

Remotely Piloted Aircraft Systems (RPAS) are the entirety of the system, from aerodrome launch pad, to the radio and transmitting/receiving antennae, monitors & sensors RPA as well as the algorithms & software, communication, control and data links, launch and recovery elements, support and maintenance equipment, operating personnel, handling, storage and transport equipment, end of flight procedures, cleaning and inspection for wear and damage and all documentation and special permitting when required SFOC required for successful RPA flights.

These aircraft have grown significantly in popularity with both the general public and within the public service. RPASs have been used within the Government for a wide in a variety of purposes

such as crop monitoring, forest health evaluation, sand and gravel monitoring, bridge inspections, and wellsite and pipeline monitoring, to name a few applications involved to operate RPASs in a safe and professional manner in accordance with all applicable laws (both federal and provincial) and local policies. Transport Canada (TC) regulates the use of all aircraft, manned or unmanned, to keep the aviation community, public, and Canadian airspace safe. RPAS operators are considered Pilots and legitimate airspace users. The Aeronautics Act, R.S.C. 1985, c. A-2 and the Canadian Aviation Regulations (CARs) establish the framework in which RPASs are to operate. Staff require special training and federal authorization in order to operate a RPAS.

Pilots before commencing the exam should have successfully completed Ground School training that conforms to the current knowledge requirements for RPA Pilots set out in Transport Canada's TP 15263 standard document,

4.1 Federal Regulations

Checklist for flying under the SFOC Special Flight Operations Certificate.

3. Check Ground RPASs for regulatory, operational, or environmental risk factors.
4. Review the proposed flight plan if the flight is to occur outside of class 'G' airspace.
5. Approve flight plans outside of class "G" airspace, communicate clearance and conditions to the FC, and confirm that SFOC conditions are being followed.
6. Notify the appropriate agencies required for the flight and if necessary gain clearance from:
 - a. Local wildfire centers.
 - b. Local airspace authorities if flying in class 'C', 'D', or 'F' airspace.
7. Provide appropriate agencies with the following information regarding each flight:
 - a. A general purpose statement or a summary of the business reasons for the flight, e.g. "inspection of bridges under Program X".
 - b. Provide contact information and include instructions and contact information may be provided to any individuals calling in, in order to direct their questions about their images potentially being collected by a RPAS or to address any privacy concerns being raised.
8. Be available where possible via email, phone, or radio during the operation. Avoid using only phone to operate the UAS/Drone.

9. Ensure ongoing communication is maintained between all necessary agencies during flights.
10. Advise or relieve the concerns of any individuals with privacy or safety concerns, if problems exist due to interference from person(s) cease operations and or move to another location free from the disturbance if necessary.

The Pilot in Command PIC

6.3 The Pilot in command PIC is the person in physical control of the craft while it is in the air. Often the Pilot will also serve as the payload (camera or video) operator and will have demonstrated competency in both flying the RPA and operating the payload simultaneously. The Pilot is responsible for the following:

1. Recording their location and TC contact information, as detailed in the Emergency Contingency Plan described in section 10.0, so they can quickly report incidents, such as a fly-away.

Mission Planning:

mp-1. Complete a flight plan detailing the particulars of the operation using the flight plan template

mp-2. File a flight plan with and obtain approval, as required outside of class G airspace,c. Within class G airspace to section 8.1.2.

mp-3. Review and comply with the SFOC, applicable TC Regulations policies, and all other applicable laws (i.e. Freedom of Information and Protection of Privacy Act, Trespass Act., Municipal park restrictions etc.

mp-3-1. Assessing airspace, aerodromes, air traffic services unit contact and radio frequencies

m3p-2. Prepare pre-programmed flights.

m3-3. Ensure the RPA and control system have current firmware and software installed.

m3p-4. Verify control software is set-up properly.

m3p-5. The altitude limitation set out in the flight authorization must be set with the control software to ensure TC compliance.

mp-4. Establish a radial working area based on the size class of the RPA. If the flight software

does not provide constraints, it is the responsibility of the Pilot to ensure compliance with these radiuses:

mp-4-1. <1kg – radius set to ¼ Nm (450m).

mp-4-2. 1kg – 25kg – radius set to ½ Nm (900m).

mp-4-3. Under FOC guidance or emergency conditions, these radiuses may be extended.

mp-4-4. Notify appropriate internal agencies prior to flight.

mp-4-5. Obtain the appropriate permissions from landowner(s), lease holders, and land managers, or notify as required according to legislative authorities.

mp-4-6 Identify hazards; this is followed up in the field on the day of the flight.

mp-4-7 Reference safety documents.

mp-5. Identify any built-up areas, telephone and electrical lines, infrastructure and facilities..

mp-6. Identify additional flight and safety hazards including, but not limited to, power lines, towers, random camping, and raptor nesting.

Operating limits of the Aerial Drone/UAS.

mp-7. Assess and record weather conditions as detailed in section 9.0 prior to and during the flight to determine if the weather will be favourable and ensure winds and temperatures do not exceed the:

Conduct Pre-flight checks prior to departure to the field:

a. Ensure NOTAMs were filed by the FOC with TC no less than 24 hours prior to the flight, if flying in C, D, E, or F airspace.

i. Flight plans requiring NOTAM shall be sent to the FOC no less than 72 hours before the flight, unless an emergency situation exists. If the flight request is non-emergency in nature, flight plans requiring NOTAM will be denied if filed within 72 hours of the flight.

b. Weather is monitored on the morning of the flight.

c. The Flight Crew Operations Procedure Manual OPM is up-to-date; ensure all necessary paper work such as insurance, SFOCs, etc., is readily accessible on site.

- d. The RPA and control station software are up-to-date.
- e. Batteries are charged.
- f. Cell phone is charged and charger is in the flight kit.
- g. 2-way radios are programmed to the appropriate air traffic frequency (126.7MHz) or other frequency for the project area if other than 126.7 MHz.

Pre-Flight checks on the day of the flight AND at the project site:

- a. Assess the project area from the ground within a 1 km radius (if accessible) for any hazards or unexpected restrictions such as airstrips, buildings, people, animals, or facilities not identified in the initial mission planning that may restrict or prevent flight operations.
- b. Ensure that a Site Specific Hazard Assessment (SSHA) has been filled out.
- c. Pre-flight hardware checks (rotors, batteries, motors, RPA shell, navigation systems, control systems and camera mounting). Defective system components, controls and software issues will compromise air-worthiness or RPAS control and the operator must not operate the RPAS.
- d. Report any pre-flight damage or malfunctions immediately to the FOC.
- e. Mitigate control signal loss and GPS loss that may result in loss of control of the RPAS by:
 - i. Ensuring the battery is fully charged prior to takeoff.
 - ii. Ensuring adequate GPS lock and home point are acquired prior to takeoff. With the exception of approved emergency operations.
 - iii. Ensuring the operation is within the operating specifications as outlined by the manufacturer.
 - iv. Boosters/signal-extenders rc chipsets ie 'Crossfire' may be required if there is concern for control signal loss.
 - v. Ensuring that flights are completed with no less than the manufacturers prescribed battery life.

5. Flight Operations:

- a. dress appropriately and professionally, prescribed apparel, flight suit or uniform, or reflective vest (including any observers) That indicates to others who is in command or crew of the operations.

- b. Block off with signs, cones, or ribbons an area at least 100' (30 metres) to prevent spectators from distracting the Pilot and to keep the landing area clear and safe.
- c. Operate the RPA only within its operating range in regards to altitude, temperature, wind speed, etc.
- d. Operate the RPA safely and cease operation immediately if safety is jeopardized, or if exemptions or terms of the SFOC are breached.
- e. Operate the RPA in VLOS at all times. If a FPV is used, there must be a Visual Observer to keep primary VLOS. If line of sight is lost, Pilot shall initiate return-to-home function.
- h. Always give right-of-way to all other aircraft (i.e. Hot air balloons, gliders, ultra-light aeroplanes, aeroplanes, gyroplanes and helicopters).
- i. Operate RPAs during daylight hours unless stated otherwise in the SFOC.
- i. Daylight Hours are ½ hour before sunrise to ½ hour after sunset, as long as VLOS is maintained.
- j. Only operate the RPA in airspace classes approved under the SFOC.
- k. Do not fly where interference could occur with first responders (fire department, police, etc.) if not involved Emergency Response activities. Respect the privacy of others.
- l. Do not operate within 5 NM of a forest fire unless under coordination with the Wildfire branch regional, provincial or federal of the location of the fire. Do not operate within 1 NM of a Department of National Defence property or controlled airspace without specific authorization.
- n. Do not operate within 1 NM of any active emergency scene or emergency response personnel without specific authorization.
- o. Do not operate more than 100 feet above ground when closer than 5 NM from any aerodrome or heliport.
- p. Maintain a safe horizontal distance (100 feet) from people, animals, structures, buildings, or vehicles not involved in the mission.
- q. Do not fly in populated areas or near large groups of people (e.g. long weekend random camp gatherings, etc.) unless the SFOC specifically allows.
- r. Ensure that the appropriate Air Traffic Service Unit(s) is advised immediately anytime the flight of the RPA inadvertently enters into controlled airspace. The Pilot must also notify the FOC and

their supervisor once incident is over.

s. Ensure that TC and the FOC are notified immediately if personal injury or property damage occurs during operation. In the event of personal injury, first aid procedures shall be immediately initiated as required.

t. Ensure that TC, the OM, and the ministry or departmental RPAS Coordinator are notified immediately if there is a fly away or lost link resulting in loss of the RPA.

u. Emergency procedures shall be initiated if an unsafe situation develops.

v. The Pilot shall notify the FOC of an incident via email. The incident must also be filed on the incident reporting system of the RPAS SharePoint.

Post Flight check list:

1. 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.
2. Charge or discharge (for storage) batteries, controller, and peripheral devices for next operation.
3. Record flight log, aerial imagery, and incident reporting.
4. Complete flight logbook entry including Pilot/co-Pilot, RPA serial number, weather, date, time, duration, and location.
5. To avoid fire, serious injury, and property damage, observe the Battery Safety Guidelines outlined by the manufacturer.
6. Maintain the Pilot log.
7. Record flights in the online Flight log/Tracker or as indicated in the manufacturers software.
8. Inform the FOC of flight completion and of any incidents related to the flight.
9. Report any post flight damage or malfunctions to the manufacturer if required.

Duties of a Visual Observer

6.4 Visual Observers are required as per the SFOC and their main role is to assist the Pilot and monitor the local air space for aircraft and hazards. The Observer must be briefed as to their

responsibilities. The Observer is not the same as a payload operator who may be operating a camera on a RPA. In some cases, the Observer will also act as the Ground Supervisor. The Observer has the following responsibilities:

1. Ensure the Pilot is not distracted by any spectators or other activities during the pre-flight, flight and post

flight operations by:

- a. Ensuring spectators respect the 100' boundary.
 - b. Answering any questions from the spectators.
 - c. Ensuring any other activities in the area do not affect the Pilot.
2. Assist the Pilot with the pre-flight site hazard assessment.
3. Help monitor radio communication.
4. Monitor the weather and notify the Pilot of any changes that may affect the flight.
5. Assist the Pilot in maintaining VLOS.
- a. The observer may NOT use binoculars to aid in maintaining VLOS; however, polarized sunglasses are encouraged.
6. Watch and listen for any approaching aircraft.
7. Assist the Pilot in identify potential hazards during the flight, such as birds.
8. Assist the Pilot in any emergency situations, which may include helping track a fly-way RPA and assisting with documentation.

Flight School/Training Flights

It is departmental policy that every RPAS Pilot must successfully complete both Ground School and Flight School in order to fly a UAS. Ground School training is provided through external trainers whereas Flight School and flight qualifications are certified internally by the RPAS Coordinator(s). TC 7.0

Flight Operations Coordinators FOC

Specific experienced RPAS Pilots may oversee flight operations and itinerary. The RPAS FOC flight operation coordinators are responsible for the following, subject to the direction of the

Operations and Procedures Manual:

1. Pilot and crew attach to itinerary proof of Flight School training and ensuring operators meet all training requirements.
2. Ensuring communications from the FOC are disseminated to Pilots.
3. Ensuring training records are retained and submitted to the FOC in accordance with the RPAS Directive

policies and standards, and ministry or departmental business rules.

The training standard to be met to demonstrate proficiency is specified in a RPAS Training Manual (to be issued). Once the training is completed, the RPASGC will register the new Pilot and the FOC will issue a FRC.

Training flights will be performed pursuant to an exemption filed with TC. However, there are still restrictions on when and where the training can occur. As well, the training flights must follow the operating procedures identified in this document, excluding obtaining an SFOC, provided the flights follow the TC exemption restrictions.

Exceptions Restrictions for RPAS Pilot Training

Training flights may be conducted in accordance to Transport Canada's exemption conditions for pilot training and supervision.7.1 TC

Operations and Procedures Manual OPM

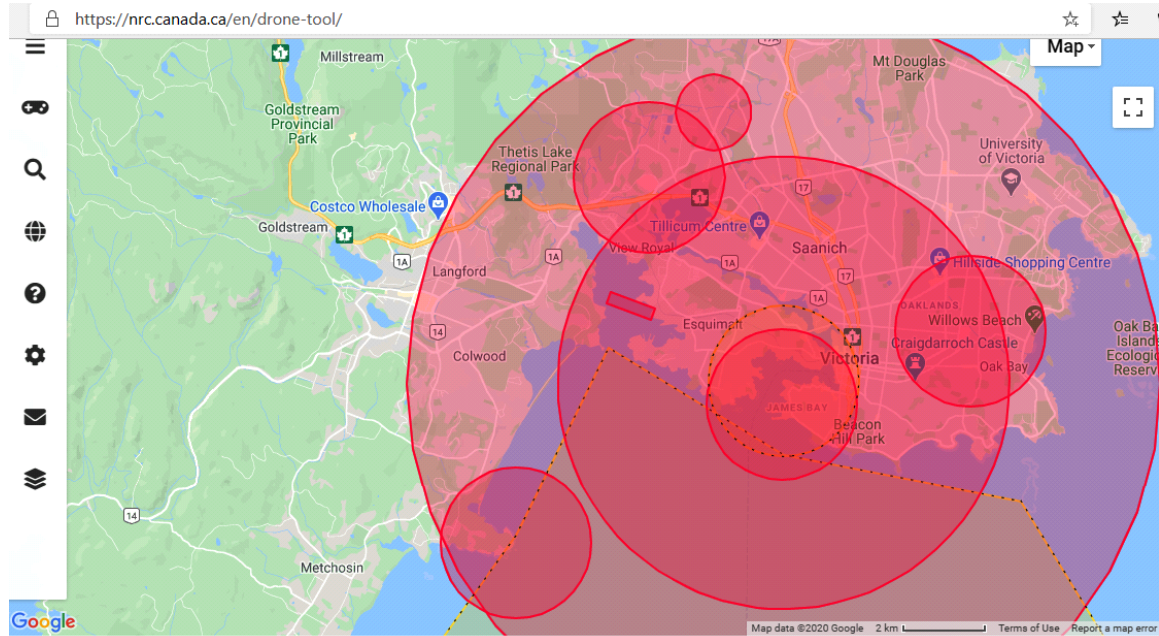
1. A pilot in charge PIC supervises and develop a flight plan as per section 8.0 and notify the OPM as per section 8.1.2.
2. You must be supervised by an experienced RPAS operator.
3. You must follow any applicable laws and policies.
4. You must follow the operating procedures identified in this document, excluding obtaining the SFOC, provided you follow the TC exemption requirements.

Mission Planning

Mission planning is the responsibility of the Flight Crew (FC). The FC is responsible for determining what TC regulations are applicable in the project area. Once the location of the operation is known, conduct an airspace assessment using the CFS and VNC to determine the class or classes of airspace you will be operating in. Assess the relevant aeronautical information

prior to commencing a flight (airspace, aerodromes, air traffic services unit contact, radio frequencies etc.) Also review the Natural Resources Canada RPAS Site Selection Tool:

<https://nrc.canada.ca/en/drone-tool/>



Restricted airspace set for BASIC RPAS (above)

Prepare the RPAS systems software and hardware is at this stage of mission planning.

The flight plan and initial hazard assessment can be based on a desktop review and/or a site visit and is completed based on all available information at the time. The flight plan is a document that details the particulars of a single flight or group of flights and consists of the following:

1. Map and date of the proposed operation.
2. The business purpose of the flight.
3. Phone number and name of the nearest medical facility.
4. List all aerodromes within 30km or, the nearest aerodrome when the closest aerodrome is more than 30km away with:
 - a. Local radio frequency and phone number.

- b. Distance in nautical miles from the operation to the aerodrome.
- c. Direction of the aerodrome using standard cardinal directions (NW, SE, etc.).
5. The centroid of the map in the format of latitude/longitude to four decimal places.
6. Detail of the airspace class in which the flight will occur.
7. The phone numbers of the FC including the OM.
8. An empty space for the sign off of the flight plan.
9. Any important Contact numbers as detailed in the Emergency Contingency Plan.

Pre Flight Planning

8.1.1 Flying in airspace other than class G To obtain authorization for a flight outside of class G airspace, the FC shall file a flight plan with the FOC for approval. Once approved, the flight plan becomes part of the FCP and must be on

hand during operations. This is a specific condition of the SFOC.

Once the flight plan is completed and filed, the FOC will review on a case-by-case basis, sign off, and return. The FOC reserves the right to:

1. Delegate to the pilot, coordination with all other agencies including filing the Notice to Airmen (NOTAM) and/or,
 - 1 Exemption Notification Form
 - 2 Exemption Conditions

Flying in Class G airspace

Pilots will be operating in class G airspace most of the time, which is uncontrolled airspace.

Typically, if no specific class of airspace is noted on the Visual Navigation Chart (VNC), the operator is in class G airspace. Note on the FCP flight contingency plan:

1. Name of Pilot and Visual Observer.

2. Location of the flight in latitude/longitude or legal land description.
3. Business purpose of the flight.
4. Description of feature (i.e. gravel pit, cut block vegetation buffer, etc.).

There is no requirement clearance in class G airspace but the flight plan shall be on-hand at all times as part of the FCP.

Flying in Forest Protection Areas

As the RPA flying season coincides with the fire season, all flights within the Forest Protection areas must:

During a wildfire event, there is an automatic 5 NM buffer around the fire, which is class F airspace. As such, refer to section 8.1.1 for the process to fly in class F airspace.

Flight Crew

the pilot, visual observers, ground control and crew must have access to this operations and procedures manual present all times while conducting flights. The OPM is somewhat limited to the specific aircraft/drone/unit that is being flown and shall include, but is not limited to:

1. Flight plan itinerary
2. This RPAS Operations and Procedures Manual.
3. Emergency Medical Plan if a crew or bystander is injured.
4. the SFOC authorizations (if required) and completed SFOC application.
5. Emergency Contingency Plan referenced in section 10.0.
6. Proof of liability insurance if required (Insurance is not mandatory currently).
7. Canadian Flight Supplement (hard or soft copy).
8. Map print outs, digital maps, sufficient map coverage or Air Chart(s) for the area (hard or soft digital copy).
9. RPAS Operator contact information and RPAS system limitation (user manual).
10. Flight Readiness Certificate.

11. Pilot Ground School Certificate and ROC-A. (if required)
12. Government issued personal identification.
13. Evidence of permission from the owner of the property from which the Drone UAV operator intends to takeoff and/or land (local regulations or delegated authorities may supercede this requirement).

Meteorology and Weather

The PIC Pilot in charge, before approving the flight as operationally safe will be apprised of weather conditions both local and area transversed and shall be apprised of the weather and continue monitoring it prior and during the flight is critical to safe operation of the RPAS.

The RPAS Pilot will not operate their aircraft in any weather conditions that exceed the operating capability of the aircraft (including the batteries and the controller). Weather observations will be:

Recorded before the preflight check and will include:

1. Wind speed and direction.
2. Topographic influences.
3. Cloud cover (8th scale).
4. Temperature.
5. Visibility.
6. Fronts speed and direction.
7. Solar and geomagnetic anomalies and kp index.

Weather Observations

Solar storms can induce strong electric currents in very long conducting structures in power grids, which causes serious and sometimes permanent damage to them. This can trigger widespread blackouts; a 1989 geomagnetic storm led to lights going out all over Quebec

Kp Index, the planetary 3-hour-range index Kp is the mean standardized K-index from 13 geomagnetic observatories between 44 degrees and 60 degrees northern or southern geomagnetic latitude. The label 'K' comes from the German word 'Kennziffer' meaning

'characteristic digit.' The K-index was introduced by Julius Bartels in 1938

Temperature will affect the operating capacity of batteries and temperature extremes will affect the battery length. In addition, colder temperatures and humidity may result in icing of the rotors and/or wings of the RPAS and can severely affect its ability to fly. If conditions are favorable for icing to occur, the Pilot will suspend the flight until conditions and visibility improves.

The Pilot and Observer will also monitor any fronts passing through the area and anticipate changes in wind speed and direction. If thunder storms are passing through or by the project area, the Pilot will suspend the flight until it has passed.

Emergency Contingency Plan

The following procedures must be followed in case of a fly-away, crash, close encounter with another aircraft, or

hard landing. To expedited notifications to TC, the Pilot will know the location of their project in decimal degrees

Fly-away Procedures

A fly-away occurs when the Pilot loses control of the RPAS and the RPA exits the project area in either a vertical or horizontal direction. The procedures to recover control will vary depending on the RPAS;

Procedure to activate 'RTH' (Return to Home)

1. Press the "RTH -Return to Home" button on the controller to try and command the Drone to return to the site.
2. If the home button does not work, the Pilot will attempt to take manual control of the Drone and fly it back to the site.

If these are successful, the Pilot will immediately land the RPA and cease all flying until the issue is resolved.

If the Pilot cannot regain control of the RPA, the Pilot will activate emergency procedures as follows:

Fly-away noted Information

1. Estimated battery life, direction of flight, potential range AND any aerodromes

affected. RPA model, weight, range and color.

2. Contact the nearest local controlled aerodrome using the Canadian Flight Supplement.

Crash Procedures & Analysis

If the RPA is involved in a crash the following steps are followed:

1. Turn off the controller and ensure the RPAS is deactivated to avoid further damage or injury.
2. Determine if there are any injuries and if so follow standard first aid procedures.
 - a. Ensure the area is safe and secure.
 - b. Call Emergency services 911 and render medical aid if required.
3. Assess if the RPA has caused damage to vehicles, buildings, powerlines or infrastructure. Ensure there is no further risk of damage or danger.
6. Once safe to do so, record the following:
 - a. Time of incident.
 - b. Weather conditions.
 - c. Events leading to the crash.
 - d. Pictures of any damage.
7. Record the incident on the incident tracker. Attach all applicable documentation to the incident report including:
 - a. Pilot record of incident.
 - b. OHS report.
 - c. Pictures of damage if applicable.

Encounters with public, property and manned Aircraft

If the RPAS has an unexpected close encounter with another aircraft that is within 150 meters (500ft), do the following:

1. Immediately land the RPA and shut it down. Cease all flights.

Hard Landing If, while the RPA is landing in an otherwise controlled manner (i.e. it was a normal landing sequence), it flips or lands hard, do the following:

1. Turn off the RPA and controller.
2. If the RPA damages private or public property treat it as a crash.
3. If only the RPA is damaged then:
 - a. Shut the RPA down.
 - b. Assess the RPA for damage.
 - i. If there are only broken rotors then replace and do a test flight to ensure the RPA is still

stable and there was no motor damage.
 - ii. If other components such as the landing gear, airframe, gimbal or camera are damaged, any further flights will cease and the RPA will be sent in for repairs or replacement as prescribed by the manufacturer.
 - c. Document the events leading to the hard landing in the same manner as a crash but there is no need to report it to TC.
4. In all cases, with out blame, inform operations and the crew of any incidents; and review procedures to prevent future events. and contact the manufacturer for further advice.
5. If the RPA appears to be undamaged, perform low-level test flights and slowly extend the flight time until you are confident it is flying correctly.
6. Once flying is completed, attach a note to the RPA indicating the unit had a hard landing and that when

the next flight occurs the Pilot should do a low-level test flight to ensure the unit is still working correctly.

Safety & Security Plan

All Pilots and Ground Supervisors listed on the SFOC will have a good understanding of airspace classification and structure, weather, notice to airmen (NOTAM) reporting services, VTA and VNC, the Canadian Flight Supplement (located in an emergency backpack with First Aid kit and Fire extinguisher), and relevant sections of the Canadian Aviation Regulations, particularly

sections 602.01, 602.07, 602.11, 602.21 and 602.4.

NOTAMs should always be filed for any RPAS operation within 5 NM of any aerodrome or within class C, D, E or F airspace.

1. Dimensions of RPAS Operations area (within 1 NM is considered standard) with reference to the:

- A. Area of operation, expressed as latitude/longitude, and
- B. Planned operational altitudes, in feet above ground level.
- C. RPA specifics, model, size, weight, colour.
- D. Date and time of operation.
- E. User contact information.

All RPAS operations will be conducted so that the safety of persons and property on the ground and other airspace users is not jeopardized. The procedures listed below will be reviewed prior to each RPAS flight activity:

1. The RPAS users are responsible for compliance with TC rules and guidelines at all times. As RPAS
2. RPAS users are responsible for complying with all other Canadian laws that might apply (e.g. Privacy Act, Criminal Code of Canada etc.) during operation. All provincial, territorial, and municipal laws and regulations must also be followed.
3. RPAS use is restricted to authorized staff only. The SFOC Certificate Holder/Pilot is in charge of determining whom may be involved and to what extent and assumes all responsibility for such action(s).
4. Always have on hand the RPAS Directive, SFOC, proof of liability insurance, VHF air band transceiver,

RPAS user contact info, maps/charts, aircraft system limitation (user manual), means of communication (cell phone, satellite radio), and fire extinguisher.

5. RPAS Lithium Polymer batteries will be transported according to the Dangerous Goods Transportation and Handling Act. Each battery must be separated from metal objects and battery terminals insulated with electrical tape or other non-conductive material as this will prevent short circuits.

6. RPAS users shall adhere to all responsibilities outlined in section 6.0.
7. Remote control signal loss and/or GPS loss may result in loss of control of the RPA and will be mitigated by:
 - a. Calibrating the RPAS compass before each flight.
 - b. Ensuring battery is above 90% or more if required prior to takeoff.
 - c. Ensuring GPS lock and home point are acquired.
 - d. Ensuring the mission is within the RPAS operating specifications.
 - e. Planning flight to complete with 30% battery power remaining.
8. RPAs not being operated shall be stored in a secure way (i.e. pelican case inside a flammable cabinet).

RPAS Maintenance

The type of maintenance performed on a RPAS will depend on the RPAS type and the recommendations from the

manufacturer of the RPAS. The Pilot and/or owner of the RPAS will follow these guidelines:

1. Never open the body of a RPAS or attempt to perform any maintenance on a RPAS that is not prescribed in the RPAS's user manual.
2. Follow the manufacturer's recommended maintenance cycles and storage recommendations.
3. Before and after each flight, inspect the RPA for visible signs of damage to any of the components paying close attention to the rotors.
4. Replace damaged rotors immediately and discard them.
5. Firmware upgrades must be performed regularly. Ensure that:
 - a. The craft is up to date before operational flights.
 - b. The controller and batteries are updated at the same time.
 - c. After all updates, a test flight must be performed to ensure that the update was

successful and that there are no conflicts between the RPA, batteries, and the controller.

Grounding of RPAS and or Crew

The PIC and Flight Medic (FM) may ground any crew member if they are deemed unfit to fly, only the PIC can ground the aircraft, however any crew member may repeat concerns.

Grounding by the PIC can be for several reasons, weather, icing and rain, temperature, fog, poor satellite GPS communications.

Due to the rapid advancement of RPAS technology, updates are frequent with the classes of RPAS deployed. There is the potential for these updates to cause conflicts with the software/firmware of the units and as such, it may be required to ground specific units if problems are encountered. Grounding of RPAS can occur for

several other reasons including:

- Unsafe environmental conditions.
- Regulatory or policy changes.
- Physical damage to units.
- Emergencies.
- Software/firmware bugs discovered.
- Failed software/firmware updates.

In the event of a Pilot grounding a specific unit, the unit status on the online Fleet Tracker will be updated with details of the condition of the craft that caused the grounded status.

If, in the event that a systemic issue arises and the entire fleet must be grounded, or a specific make or model must be grounded, a notification will be sent from the FOC to all Pilots with details of the situation that is affecting the ability to fly safely. Once the issue is resolved, Pilots will be notified that the grounding has lifted and normal RPAS operations can continue.

Incident Reporting

Reporting of incidents is imperative to ensuring the operation of a safe and legally compliant RPAS program. Incident reporting serves not only as a way to stay legally compliant, but also serves as a mechanism that will enable tracking issues that may prove to undermine the effectiveness of a specific RPAS. Incident reporting will also enable the FOC to identify gaps in training and provide an avenue to address those gaps. Additionally, federal law dictates that a

Pilot of a RPAS cease operations if any of the following incidents or accidents occurs, until such time as the cause of the occurrence has been determined and corrective actions have been taken to eliminate the risk of reoccurrence:

1. Injuries to any person requiring medical attention.
2. Unintended contact between the unmanned aircraft and persons, animals, vehicles, vessels, buildings or structures.
3. Unanticipated damage incurred to the airframe, control station, payload or command and control links that adversely affects the performance or flight characteristics of the unmanned aircraft.
4. Anytime the unmanned aircraft is not kept within lateral boundaries or altitude limits.
5. Any collision with or loss of separation from another aircraft.
6. Anytime the unmanned aircraft becomes uncontrollable, experiences a fly-away or is missing.
7. Any incident not referred to in paragraphs (a) to (f) for which a Canadian Aviation Daily Occurrence Report.

In situations where a report of interference from any persons that jeopardized the safety of the flight (either direct interference with the crew and/or the aircraft), the crew will notify the FOC and cease operations until the issue is resolved.

Section 10.0 of this Directive outlines an order of operations for internal reporting of incidents in the Emergency Contingency Plan. Internal incidents are reported through an online form (Figure 2). This is a live system that immediately notifies the FOC that an incident has occurred. If the incident resulted in damage to any personal or public property, or resulted in an injury to the public.

The RPA involved in the incident is automatically grounded until the internal investigation is completed and if required, permission is obtained from FOC. Filing of incident reports with FOC is the responsibility of the SFOC Pilot in command.



Flight Crew Checklist

the pilot, visual observers, ground control and crew must have access to this medical and the OPM operations and procedures manual present all times while conducting flights. The OPM is somewhat limited to the specific aircraft/drone/unit that is being flown and shall include, but is not limited to:

- Flight plan itinerary and documents
- This RPAS Operations and Procedures Manual.
- Emergency Medical Plan if a crew or bystander is injured.
- the SFOC authorizations (if required) and completed SFOC application.
- Emergency Contingency Plan referenced in section 10.0.
- Proof of liability insurance if required (Insurance is not mandatory currently).
- Canadian Flight Supplement (hard or soft copy).

Preparation Checklist

Check NOTAMS

- Complete any notifications as specified in SFOC (if required, and as noted above)
- Current weather and forecast check

- Date/ Time
- Location
- Visibility
- Wind (knots)
- Cloudiness / Fog
- Temperature

CHECKLIST - Equipment to Pack

- 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 sun shade
- Hazard Assessment and Safety Emergency Plan
- Documents
- Procedure
- SFOC
- RPAS exemptions,(if applicable)

- Proof of liability insurance,
- Pilot contact information
- CFS VNC/VTA (Chart Supplements)
- Aircraft system limitations (user manual)
- Sunglasses
- High-Visibility Vest



Aerial Drone PRE-FLIGHT Medic Checklist

I certify,

- The Pilot, operations, crew and *passengers (+consenting but not operators)

Are FIT TO FLY: _____ INITIALS _____

- Map and date of the proposed operation: (Attached)

Notations: _____

- The business or operational purpose of the flight:

Phone number and name of the nearest emergency clinic or medical facility.

The phone numbers of the FOC and office contacts.

Any important Contact numbers as detailed in the Emergency Contingency Plan.

Any important Contact numbers as detailed in the Emergency fire, ambulance and police.

Medic flight sign off (below)

End of Flight # _____ Sign off, Dated _____ 20__ time _____

_____ **(Print Name)**

Signature Flight Medic

Signature Pilot in Command

END OF FLIGHT

Return RPAS to landing zone. Confirm Landing zone is clear. Descend until RPAS is on ground, Shut down motors, Power off RPAS, Power off control unit



Safety Procedures and Equipment Checklist 0.001.2020

- Communications, radio, phone, Internet redundancies etc.**
- Fire Extinguisher**
- First Aid Kit (has own checklist below)**
- Hard hat, head and eye protection**

- Proppellor guards are installed if shooting near people
- Vest, launch pad, Cones and flagging.



Medical Supplies Supplement

Flight Medics Checklist 0.001.2020

- Scissors.
- Pain reliever, Aspirin, Acetaphemin, Ibuprophen.
- Tourniquet.
- Gauze.
- Disenfectant.
- Hemastat.
- Bandages.
- Adhesive tape.

- Elastic wrap bandages.
- Bandage strips and "butterfly" bandages in assorted sizes.
- Super glue.
- Duct tape *and other operations tools may be useful
- Rubber tourniquet or 16 French catheter.
- Nonstick sterile bandages and roller gauze in assorted sizes.
- Eye shield or pad.
- Face and or Mouth PPE.
- pulse oximeter & oxygen if above 10000 ft
- Large triangular bandage (may be used as a sling)

Medic flight sign off, Initials _____ Date _____ 20_____



MEDICAL FIRST AID FOR AERIAL DRONE AVIATORS

Medics Guide

Aerial Drones are powerful and potentially dangerous aircraft systems, as you can imagine cuts and lacerations are all too common. Often such a situation requires first aid.

the propellers are essentially whirling razor blades, a flying gskillsaw just looking for absent minded fingers to send flying.



PREVENTION FIRST

Always be looking out for a potentially dangerous situation or condition and mitigate the situation.

Before maintenance remove blades, and power down before handling, In flight keeps eyes on aerial drone and be ready to

move suddenly if it loses power or fly away right at you...



Youtuber getting too close to multicopter rotors (above)

The medical kit and the checklist you compile for the supplies you determine are needed, should be stocked with wide a selection of bandages and supplies suitable to the risks and environment to be encountered.

The ABCs of First Aid

The response, just think Dr ABC. Danger? If the situation is dangerous wait for assistance before placing yourself into a harmful situation.

Response, this is determining the responsiveness of the victim, are

they conscious? breathing? alert? The ambulance service will want to know this in assessing the severity of injury.

We can use DRABC to do this: Danger, Response, Airway, Breathing and Circulation.

What to do

A good First Aider listens, talks, reassures, comforts and understands how the Casualty may be feeling and can put them at ease

Assess the situation quickly and calmly. Safety: check whether you or the casualty are in any danger. Protect yourself and them from any danger. After you have removed the danger or the danger is no longer present assess the victim for responsiveness and alertness.

The ABC of first aid

In first aid, ABC stands for airway, breathing, and circulation. minimize further injury. CPR stands for cardiopulmonary resuscitation. It helps maintain the flow of oxygenated blood

A is for Airway and Breathing

Are they breathing? The first A is Airway, is the airway open and are they breathing? If not try to open the airway by tilting their head back, clearing blood and phlem etc. If you have an airway

device you may use it as your training permits.

Artificial resuscitation

If they are still not breathing, you will need to begin artificial resuscitation, breathing for them in patterns, with chest compressions if no heart beat is detected and that's C Circulation.

B is for Blood and Bleeding

Prevent infection between you and them. and wash with soap and water afterwards.

Comfort and reassure. The victim is most likely in shock and stress, use calm reassuring tones and words, let them know help is on the way.

C is for Circulation - before Giving CPR

1 Check the scene and the person. Make sure the scene is safe, then tap the person on the shoulder and shout "Are you OK?" to ensure that the person needs help.

2 Call 911 for assistance. If it's evident that the person needs help, call (or ask a bystander to call) 911, then send someone to get an AED. (If an AED is unavailable, or a there

is no bystander to access it, stay with the victim, call 911 and begin administering assistance.)

3 Open the airway. With the person lying on his or her back, tilt the head back slightly to lift the chin.

4 Check for breathing. Listen carefully, for no more than 10 seconds, for sounds of breathing. (Occasional gasping sounds do not equate to breathing.) If there is no breathing begin CPR.

Red Cross CPR Steps

1 Push hard, push fast. Place your hands, one on top of the other, think pumping up action as in an air mattress... in the middle of the chest. Use your body weight to help you administer compressions that are at least 2 inches deep and delivered at a rate of at least 100 compressions per minute.

2 Breaths /30 Compressions

2 Deliver rescue breaths. With the person's head tilted back slightly and the chin lifted, pinch the nose shut and place your mouth over the person's mouth to make a

complete seal. Blow into the person's mouth to make the chest rise. Deliver two rescue breaths, then continue compressions.

Note: If the chest does not rise with the initial rescue breath, re-tilt the head before delivering the second breath. If the chest doesn't rise with the second breath, the person may be choking. After each subsequent set of 30 chest compressions, and before attempting breaths, look for an object and, if seen, remove it.

3 Continue CPR steps. Keep performing cycles of chest compressions and breathing until the person exhibits signs of life, such as breathing, an AED becomes available, or EMS or a trained medical responder arrives on scene.

Note: End the cycles if the scene becomes unsafe or you cannot continue performing CPR due to exhaustion.

or if they come too...Stabilize and transport.

Cuts and Lacerations

Apply antibiotic ointment, and then cover the wound area with a sterile gauze bandage and first-aid tape. Clean the wound area daily with soap and water and apply a fresh sterile bandage. For a minor laceration, remove the bandage after a couple of days to promote healing

Burns *For minor burns:*

Cool the burn.

Remove rings or other tight items from the burned area.

Don't break blisters.

Apply lotion.

Bandage the burn.

If needed, take an over-the-counter pain reliever, such as ibuprofen (Advil, Motrin IB, others), naproxen sodium (Aleve) or acetaminophen (Tylenol, others).

Battery LiPO or Chemical Burns

First aid treatment calls for flushing the skin (and eyes) for 10–15 minutes with large amounts of water to cool the affected tissue and to prevent secondary damage. Immediately remove contaminated clothing and thoroughly wash the underlying skin. Always wear protective equipment when handling sulfuric acid.

Severed Finger

If your fingertip is completely cut off, do the following:

Gently clean the amputated part with water or, if possible, with sterile saline solution.

Cover it in a moistened gauze wrap.

Place it in a watertight bag.

Put in bag on ice in a sealed container.

Severe allergic reactions

Lay the person flat – do not allow them to stand or walk.

administer adrenaline with an autoinjector (such as an EpiPen®)

always dial triple zero (000) to call an ambulance in a medical emergency.

Electric shock

Turn off the source of electricity, if possible. ...

Begin CPR if the person shows no signs of circulation, such as breathing, coughing or movement.

Try to prevent the injured person from becoming chilled.

Apply a bandage.

Head Trauma

Apply firm pressure to the wound with sterile gauze or a clean cloth. But don't apply direct pressure to the wound if you suspect a skull fracture. Watch for changes in breathing and alertness. If the person shows no signs of circulation — no breathing, coughing or movement — begin CPR

Inhalation & Smoke Exposure

In the past, the use of emergency oxygen was commonly recommended as a first-aid procedure for any inhalation exposure. This practice was adopted because oxygen was thought to be helpful in any case where the victim became short of breath or unconscious.

Heat Exposure

Rest in a cool place. Getting into an air-conditioned building is best, but at the very least, find a shady spot or sit in front of a fan. Drink cool fluids. Stick to water or sports drinks. Try cooling measures. Loosen clothing.

Cold Exposure

Remain calm.

Find shelter so you can get out of the cold, the wind, or the water.

Remove cold, wet clothes

Move around, but don't be so active that you sweat.

Drink warm fluids that do not contain caffeine or alcohol.

Try to avoid putting your whole body in warm water.

Do not use tobacco.

Stroke

Call emergency services.

If you're caring for someone else having a stroke, make sure they're in a safe, comfortable position.

Check to see if they're breathing.

Talk in a calm, reassuring manner.

Cover them with a blanket to keep them warm.

Transport.

Shock

Lay the Person Down, if Possible. Elevate the person's feet about 12 inches unless head, neck, or back is injured or you suspect broken hip or leg bones.

Begin CPR, if Necessary. If the person is not breathing or breathing seems dangerously weak:

Treat Obvious Injuries.

Keep Person Warm and Comfortable.

Follow Up.

Broken Bones

Stop any bleeding. Apply pressure to the wound with a sterile bandage, a clean cloth or a clean piece of clothing.

Immobilize the injured area. Don't try to realign the bone or push a bone that's sticking out back in. ...

Apply ice packs to limit swelling and help relieve pain. ...

Treat for shock.

Fever

Drink plenty of fluids to stay hydrated. Dress in lightweight clothing. Use a light blanket if you feel chilled, until the chills end. Take acetaminophen (Tylenol, others) or ibuprofen (Advil, Motrin IB, others).

Hypoxia

Remove the patient from the cause. (below 10,000 ft)

Monitor patient level of consciousness (AVPU).

Maintain patient's airway.

Unconscious patient to be placed in the recovery position.

If available use a pulse oximeter on patient's finger (a non invasive method of measuring the oxygenation of haemoglobin).

Drowning

What to do if someone has drowned:

Try to wake the casualty to consciousness.

Lie them on their back and tilt their chin and head backwards to help clear their airway. ...

Give them 5 rescue breaths. commence CPR.

If you are on your own, then once you've done 5 rescue breaths and one minute of CPR you can take the time to call the emergency services.

A Sprain

Ice the area. Use a cold pack, a slush bath or a compression sleeve filled with cold water to help limit swelling after an injury. Try to ice the area as soon as possible after the injury and continue to ice it for 15 to 20 minutes, four to eight times a day, for the first 48 hours or until swelling improves.

Final Patient Assessment

Assess the casualty and give first aid treatment. If the accident is minor bandage it up and make a reporting. A serious injury and death should be reportewd to the FOC and TC Canada under CARs Part IX

Arrange for help if needed.

Refer to the Medical Emergency contact list and call for assistance if required, remain with victim until help arrives.

Colngratulations on earning your FLIGHT MEDIC Wings!



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