



RescUAV Mission Planning

To be completed 48 hours prior to flight

Please make a COPY of this set of documents for every UAV operation

Mission Date:		Mission Time:	
Pilot in Command:		Location:	
Visual Observer:		Airframe:	
Mission Planner:		Operations Manager:	
Requesting Agency:		Response Name:	
GPS (decimal format)			

Property Permission:

Property permission must be obtained from property owners or stakeholders. All properties within 30 meters of the flying area must be notified of the operation and given a method to contact with objections or concerns.

- ☐ Obtain property permission from a person with authority over subject property.
- ☐ Notify the property owner, residents, and businesses of the mission and air traffic hazards.
- ☐ Notification of operation to residences and businesses within 30m of the the flying area

Risk Mitigation

This checklist is meant to identify all possible risks in the air, on the property, and in the surrounding area. Do not limit yourself to the items listed, think outside of this list for other risks that could exist.

- ☐ Site Map
- ☐ Identify at-risk buildings on the map
- ☐ Describe buildings at risk:

- ☐ Any overhead obstacles (power lines, trees, etc)

Yes No

If yes:

- ☐ Identify overhead obstacles on the map
- ☐ List overhead obstacles:

- ☐ Challenging terrain (dramatic changes of elevation?)

☐ Any persons or animals to be on site or within the buffer zone:

Yes No

If yes:

☐ Identify areas with persons/animals on the map

☐ Who/What:

☐ Plan to brief these people on the operation

☐ File NOTAM (when applicable, within 48 hours of operation)

☐ Check charts and Canada Flight Supplement

☐ Is the area in controlled airspace

☐ If yes:

- Class of airspace (A and B are not permitted): _____
- List contact of the Control Tower/Flight Service Station or Local operator for coordination:

- What are the area frequencies that should be monitored? List all:

- List all hazards and mitigation plans

☐ Print Canadian Flight Supplement and relevant aeronautical charts

☐ **Written** approval from area airports and authorities listed above (within 48 hours of flight operations)

☐ Include restrictions and consideration on the site map

☐ Identify the flight altitude : _____ AGL (not to exceed 400')

☐ Identify takeoff and landing areas on the site map

☐ Identify emergency landing areas on the site map

☐ Identify and list all authorities that will need to be consulted or notified (e.g DND, government)

☐ Will permits be required?

Yes No

If yes:

- List all permits required:

☐ Permits obtained

☐ File Emergency Contact information in RescUAV Emergency Response Procedures

☐ Nearest Local ATS unit: _____

☐ ACC Shift Manger #: _____

☐ Transport Canada _____

☐ PNR: PNRSPECIALFLIGHTOPS@TC.GC.CA

☐ Pacific: CAOPac-OACPac@tc.gc.ca

Sign-off

To be signed by the Operations Manager

Signature: _____

Print Name: _____

Date: _____

ATTACH SITE MAP HERE

Pre-Flight Checklist and Packing List

Complete Min. 8 hours before operation

Pre-Flight		8 Hours min	
<input type="checkbox"/>	Charge/inspect all flight batteries	<input type="checkbox"/>	Charge Aviation VHF
<input type="checkbox"/>	Charge/inspect tablets and controllers	<input type="checkbox"/>	Charge Team FRS Radios
<input type="checkbox"/>	Charge/inspect base stations	<input type="checkbox"/>	Charge laptop
<input type="checkbox"/>	Visual inspection of airframe /props	<input type="checkbox"/>	Confirm software/firmware updates and matched
<input type="checkbox"/>	Visual inspection of payloads	<input type="checkbox"/>	Generator check and test
<input type="checkbox"/>	WX Brief	<input type="checkbox"/>	Clear memory cards
<input type="checkbox"/>	Charge anemometer	<input type="checkbox"/>	Motor Test
<input type="checkbox"/>	Fill in the FHLA		

SKYRANGER								
IN	QTY	ITEM	OUT		IN	QTY	ITEM	OUT
<input type="checkbox"/>		Flyer Body	<input type="checkbox"/>		<input type="checkbox"/>		EO/IR	<input type="checkbox"/>
<input type="checkbox"/>		Tablet & Charger	<input type="checkbox"/>		<input type="checkbox"/>		GPS Antennae	<input type="checkbox"/>
<input type="checkbox"/>		Base Station & Charger	<input type="checkbox"/>		<input type="checkbox"/>		Directional Antennae	<input type="checkbox"/>
<input type="checkbox"/>		Arms	<input type="checkbox"/>		<input type="checkbox"/>		Aeryon Batteries	<input type="checkbox"/>
<input type="checkbox"/>		Legs	<input type="checkbox"/>		<input type="checkbox"/>		Charging Cases (2 cords)	<input type="checkbox"/>
<input type="checkbox"/>		HD Zoom	<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>

M200								
IN	QTY	ITEM	OUT		IN	QTY	ITEM	OUT
<input type="checkbox"/>		M200 Body	<input type="checkbox"/>		<input type="checkbox"/>		Charging Hubs & Cords	<input type="checkbox"/>
<input type="checkbox"/>		Controller	<input type="checkbox"/>		<input type="checkbox"/>		iPad Cooling Case (w/batteries)	<input type="checkbox"/>
<input type="checkbox"/>		iPad (and 2 cables, and charger)	<input type="checkbox"/>		<input type="checkbox"/>		X4S	<input type="checkbox"/>
<input type="checkbox"/>		M200 Batteries	<input type="checkbox"/>		<input type="checkbox"/>		Legs	<input type="checkbox"/>
<input type="checkbox"/>		Props	<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>

MAVIC								
IN	QTY	ITEM	OUT		IN	QTY	ITEM	OUT
<input type="checkbox"/>		Mavic Flyer	<input type="checkbox"/>		<input type="checkbox"/>		Mavic Charger (stock)	<input type="checkbox"/>
<input type="checkbox"/>		Controller	<input type="checkbox"/>		<input type="checkbox"/>		Mavic Charger (3 battery)	<input type="checkbox"/>
<input type="checkbox"/>		Mavic Batteries	<input type="checkbox"/>		<input type="checkbox"/>		Mavic Car Charger	<input type="checkbox"/>
<input type="checkbox"/>		Charging Hubs	<input type="checkbox"/>		<input type="checkbox"/>		iPad (and 2 cables, and charger)	<input type="checkbox"/>
<input type="checkbox"/>		Props	<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>

MISC GEAR								
<input type="checkbox"/>		Payload (other)	<input type="checkbox"/>		<input type="checkbox"/>		Pens	<input type="checkbox"/>
<input type="checkbox"/>		Memory Cards	<input type="checkbox"/>		<input type="checkbox"/>		Ziplock bags	<input type="checkbox"/>
<input type="checkbox"/>		Memory Card Reader	<input type="checkbox"/>		<input type="checkbox"/>		Measuring Tape	<input type="checkbox"/>
<input type="checkbox"/>		Tripod	<input type="checkbox"/>		<input type="checkbox"/>		Lens cleaning cloth	<input type="checkbox"/>
<input type="checkbox"/>		Aviation VHF	<input type="checkbox"/>		<input type="checkbox"/>		Flashlight	<input type="checkbox"/>
<input type="checkbox"/>		Team Radios	<input type="checkbox"/>		<input type="checkbox"/>		Spare batteries	<input type="checkbox"/>
<input type="checkbox"/>		Laptop (and charger)	<input type="checkbox"/>		<input type="checkbox"/>		Anemometer	<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>

SAFETY								
IN	QTY	ITEM	OUT		IN	QTY	ITEM	OUT
<input type="checkbox"/>		Flagging tape /cones	<input type="checkbox"/>		<input type="checkbox"/>		PPE	<input type="checkbox"/>
<input type="checkbox"/>		First Aid Kit	<input type="checkbox"/>		<input type="checkbox"/>		Steel Toolbox	<input type="checkbox"/>
<input type="checkbox"/>		Whistles	<input type="checkbox"/>		<input type="checkbox"/>		Personal Survival Kit	<input type="checkbox"/>
<input type="checkbox"/>		Rags/Wipes	<input type="checkbox"/>		<input type="checkbox"/>		Fire Extinguisher (Class D)	<input type="checkbox"/>

POWER								
IN	QTY	ITEM	OUT		IN	QTY	ITEM	OUT
<input type="checkbox"/>		Generator	<input type="checkbox"/>		<input type="checkbox"/>		12 Volt Inverter	<input type="checkbox"/>
<input type="checkbox"/>		Extension Cord	<input type="checkbox"/>		<input type="checkbox"/>		Power Bar	<input type="checkbox"/>
<input type="checkbox"/>		Generator Fuel	<input type="checkbox"/>		<input type="checkbox"/>		Generator Oil	<input type="checkbox"/>
<input type="checkbox"/>		Spill control	<input type="checkbox"/>		<input type="checkbox"/>			<input type="checkbox"/>

PAPERWORK								
IN	QTY	ITEM	OUT		IN	QTY	ITEM	OUT
<input type="checkbox"/>		Approved SFOC	<input type="checkbox"/>		<input type="checkbox"/>		SFOC Application	<input type="checkbox"/>
<input type="checkbox"/>		UAV Operations Notice	<input type="checkbox"/>		<input type="checkbox"/>		Property permits	<input type="checkbox"/>
<input type="checkbox"/>		NOTAM	<input type="checkbox"/>		<input type="checkbox"/>		FLHA	<input type="checkbox"/>
<input type="checkbox"/>		Written approval from ATC	<input type="checkbox"/>		<input type="checkbox"/>		Current CFS and charts	<input type="checkbox"/>
<input type="checkbox"/>		RescUAV Emergency Procedures	<input type="checkbox"/>		<input type="checkbox"/>		Insurance docs	<input type="checkbox"/>
<input type="checkbox"/>		RescUAV Mission Planning Doc	<input type="checkbox"/>		<input type="checkbox"/>		Field Documents	<input type="checkbox"/>
<input type="checkbox"/>		RescUAV Standard Ops Guide	<input type="checkbox"/>		<input type="checkbox"/>		Personnel Certifications	<input type="checkbox"/>
<input type="checkbox"/>		RescUAV Onsite Checklist	<input type="checkbox"/>		<input type="checkbox"/>		Pilot Operating Manuals	<input type="checkbox"/>



Onsite Checklist

Complete Min. 8 hours before operation

Mission Data

Mission Date:		Mission Time:	
Mission/Task Name:		Response Name:	
Location:		Weather:	
Mission Planner:		Airframe:	
Local ATS Unit:		Contact:	
GPS (decimal format)			

Flight Crew:

Pilot in Command:		Ground Supervisor:	
Visual Observer:		System Maintainer:	
Mission Planner:		Operations Manager:	
By-standers:			

Pre-flight Safety Checklist:

- ☐ FLHA is completed
- ☐ Monitor air traffic advisory frequency (123.5)
- ☐ Contact local ATS Unit
- ☐ Notify on-Site Ccontact
- ☐ Check weather:
 - ☐ Wind speed at ground level: _____ (must be ≤ 30 kph)
 - ☐ Current temperature: _____ (within -10° to 51° C)
 - ☐ Cloud ceiling: _____ (above 1000' AGL)

- ☐ Visibility: _____ (greater than 1.5km)
- ☐ No precipitation/icing
- ☐ Check takeoff and landing zone is obstacle free to 10m radius
- ☐ Check the flight area (clear of all persons not related to the operation)
- ☐ Check the flight path (not intersect any government roads or inhabited buildings)
- ☐ Check for power lines, wild animals, overhead obstacles, water ponds)
- ☐ Safety briefing (flight crew and bystanders)
 - ☐ Roles
 - ☐ Situational awareness tips
 - ☐ Flight plan
 - ☐ Altitude _____
 - ☐ Flight Radius: _____
 - ☐ Emergency contacts and procedures
 - ☐ How to contact RescUAV crew and HQ

Pre-Flight Prep and Aircraft Checklist. Complete IN ORDER

<input type="checkbox"/> Ensure LZ is clear of obstacles to 10	<input type="checkbox"/> Final check of LZ for risks and hazards
<input type="checkbox"/> Ensure flight path is clear of hazards	<input type="checkbox"/> Level UAV and power up
<input type="checkbox"/> Check for power lines/wild animals/overhead obstacles	<input type="checkbox"/> Confirm connections to base station/controller
<input type="checkbox"/> Mount base station to tripod or elevate	<input type="checkbox"/> Confirm battery voltage/power
<input type="checkbox"/> Power up base station (confirm battery level)	<input type="checkbox"/> Calibrate compass/gimbal if needed
<input type="checkbox"/> Power up tablet/controller (confirm battery)	<input type="checkbox"/> Ensure there no errors/"Ready to Fly"
<input type="checkbox"/> Design/check final flight plan on tablet	<input type="checkbox"/> Ensure min 5 GPS satellites locked
<input type="checkbox"/> Save flight plan	<input type="checkbox"/> Advise ATC of take-off
<input type="checkbox"/> Unpack/unfold airframe and inspect	<input type="checkbox"/> Clear LZ - Announce "Clear LZ"
<input type="checkbox"/> Inspect, then attach arms/props	<input type="checkbox"/> Announce: "Taking Off"
<input type="checkbox"/> Add memory cards	<input type="checkbox"/> Bring UAV to 3M hover and ensure calibration/GPS
<input type="checkbox"/> Add payload and inspect	<input type="checkbox"/> Check manual control
<input type="checkbox"/> Install battery	<input type="checkbox"/> Check camera control
<input type="checkbox"/> Confirm MSA is set appropriately	<input type="checkbox"/> Ascend to flight altitude and 360° check
<input type="checkbox"/> Confirm MSA is set appropriately	<input type="checkbox"/> Initiate planned/autonomous flight
<input type="checkbox"/> Confirm Max Flight Radius is appropriate	<input type="checkbox"/>

Post-Flight Checklist

<input type="checkbox"/>	Ensure LZ is clear of obstacles to 10m	<input type="checkbox"/>	Power off generator
<input type="checkbox"/>	Announce "Landing UAV"	<input type="checkbox"/>	Remove memory card and store
<input type="checkbox"/>	Land UAV	<input type="checkbox"/>	Transfer card to laptop for check (OPT)
<input type="checkbox"/>	Power down UAV	<input type="checkbox"/>	Pack and remove UAV from LZ (use checklist)
<input type="checkbox"/>	Advise ATC of completion	<input type="checkbox"/>	Complete all Flight Logs
<input type="checkbox"/>	Save all flight plans	<input type="checkbox"/>	Log any incidents
<input type="checkbox"/>	Power down tablet/controller	<input type="checkbox"/>	Report any incidents to proper authorities
<input type="checkbox"/>	Power down base-station	<input type="checkbox"/>	Remove any notifications/flags from area
<input type="checkbox"/>	Inspect UAV and parts for any damages	<input type="checkbox"/>	Notify all crew and bystanders that the operation is complete
<input type="checkbox"/>	Remove battery and store	<input type="checkbox"/>	Clear operation area removing all equipment (confirmed by checklist)

Overnight at Base:

<input type="checkbox"/>	Inspect all images and organized per procedure	<input type="checkbox"/>	Clean all gear used in the field
<input type="checkbox"/>	Upload all images for processing/archiving	<input type="checkbox"/>	File SitRep
<input type="checkbox"/>	Backup all images and flight data	<input type="checkbox"/>	Initiate 8hr Pre-Flight Checklist if required
<input type="checkbox"/>	Upload and backup flight logs		



Emergency Response Procedures

Emergency Contact Information:

Nav Canada Shift Manager: _____

Local ATC (if applicable): _____

Operations Manager: _____

Emergency Responsibilities

Pilot in Command (PIC):

1. Activate "RTH" button in MCS (if radio communication is resumed).
2. Assess whether the redundant system & safeguards have been activated
3. Repeat 2&3
4. If control is regained, assess the cause of signal loss and/or terminate mission and ensure that the UAV is landed as soon as safe to do so.

Ground Supervisor (GS):

1. Warn all personnel in area of the situation
2. If within **controlled airspace**, contact **local ATC** and provide the following:
 1. Current location
 2. Description of the issue and aircraft involved
 3. Estimate the heading, altitude, speed and endurance of the UAV based on information from the PIC and VO
3. If within **uncontrolled airspace**, warn local aircraft by contacting **Nav Canada shift manager** and provide the following:
 1. Current location
 2. Description of the issue and aircraft involved
 3. Estimate the heading, altitude, speed and endurance of the UAV based on information from the PIC and VO
4. If all above procedures fail, contact 911 with the following information:
 1. Current location
 2. Description of the issue and aircraft involved
 3. Estimate the heading, altitude, speed and endurance of the UAV based on information from the PIC and VO
5. Assess any and all damage and fill in a RescUAV UAV Incident Report



UAV Operation Notification

Dear Property Owners/Resident/Contractors:

GlobalMedic is flying an unmanned aerial vehicle (UAV), which is a remotely piloted aircraft system, in the area indicated below on ____ Day of _____ 20____. The purpose of the flight is to collect aerial photographs and video in order to support _____ in an active search and rescue task.

The flights are being performed with an Aeryon SkyRanger whose take-off weight is apprise 2.5kg. The flights will be performed in patterns designed to maximize the chance of detecting the missing subject in the least amount of time possible. Flight altitude will be _____ and will be restricted to areas approved by Transport Canada and deemed significant for searching by the authorizing agency.

Please be assured the your safety and privacy are the top priority of GlobalMedic and our crew. We are committed to safe and responsible operation of remotely piloted aircraft that you can feel comfortable having in your area. We appreciate your understanding and cooperation in this critical and potentially life-saving mission. Please ensure the following procedures are taken for your safety:

- Where possible, please avoid going outside while the UAV is flying overhead
- Please stay away from the flight area and do not enter the landing zone as defined by the crew.
- Please follow the instruction of the UAV crew
- Please do **not** try to catch the aircraft or interact with it in any way.
- Please do **not** use electronic devices with strong magnetic interference.

As required by law, we only fly when permitted by Transport Canada and all other applicable authorities. Should you have any questions or observe anything that concerns you please contact us at: **604-652-2347**

Sincerely,

Brett Simms

Operations Manager and Program Coordinator

ATTACH SITE MAP HERE





Field-Level Hazard Assessment

It is mandatory to fill out a new FLHA on the day of the initial site visit, and whenever the scope of work changes. If scope of the work does not change, review the existing and add any new hazards and initial the daily section at the bottom of page 2. FLHA is to have a maximum duration of one (1) week from the start date.

Project Information			
Mission Date:		Mission Time:	
Pilot in Command:		Location:	
Mission Planner:		Operations Manager:	
GlobalMedic Emergency Contact:		GlobalMedic Emg Phone:	
Nearest Hospital:		Address:	
Primary Site Contact:		Authorizing Agency Contact:	
Site Surveyor:		Surveyor Signature:	

PPE and Safety Measures			
<input type="checkbox"/>	Hi-Vis Vest	<input type="checkbox"/>	Hearing protection
<input type="checkbox"/>	2-way Radios	<input type="checkbox"/>	Safety boots
<input type="checkbox"/>	Cellular phone	<input type="checkbox"/>	Traffic signage
<input type="checkbox"/>	Hard hat/helmet	<input type="checkbox"/>	First Aid kit
<input type="checkbox"/>	Safety glasses	<input type="checkbox"/>	Rubber gloves
<input type="checkbox"/>	Safety gloves	<input type="checkbox"/>	Outdoor survival kit
<input type="checkbox"/>	Additional Visual Observers	<input type="checkbox"/>	

Mission or Week End					
Incidents:	Yes	No	If an incident has occurred send completed Incident Report and this FLHA to the Operations Manager and HQ immediately, and complete a new FLHA. Near misses can also be reported.		
Near misses?	Yes	No			
Site Surveyor:					
Site Surveyor Signature:				Date:	
Operations Mgr:					
Operations Mgr Signature:				Date:	



Hazard Assessment		
ACTIVITY	POTENTIAL HAZARDS	CONTROL MEASURES
Access/Egress of Site		
Equipment Setup		
Working on Site:		
Other:		

Daily Sign-Off - must be initialled by Operations Manager or Pilot-In-Command Daily							
Date:							
Ops Mgr							
PIC							

OPERATIONAL GO/NO-GO RISK ASSESSMENT

Factors:	1	2	3	Score
Pilot Sleep in last 24 hours:	≤ 4 hrs	4-7 hrs	≥ 7 hrs	
Pilot UAS flight hours in last 30 days:	≤ 5 hrs	5-10 hrs	≥ 10 hrs	
Planned Flight Duration: (per battery)	≥ 32 min (SR) ≥ 22 min (DJI)	25-31 min (SR) 18-22 min (DJI)	≤ 24 min (SR) ≤ 20 min (DJI)	
Planned Flight Distance (BVLOS applicable for flights outside of Canada ONLY)	≥ 1k or BVLOS	n/a	≤ 1km and VLOS	
Forecasted Winds During Flight:	≥ 35 kph (SR) ≥ 30 kph (DJI)	25-34 kph (SR) 22-29 kph (DJI)	≤ 25 kph (SR) ≤ 21 kph (DJI)	
Forecasted Visibility & Ceiling:	V: ≤ 1.5 km C: ≤ 165m	V: ≤ 1.5 km C: ≤ 165m	V: ≥ 5km C: ≥ 300m	
Outside Air Temp (C°):	≤ 0 or ≥ 35	1-10 or 29-34	11 to 28	
Batteries fully charged?:	No	n/a	Yes	
Planned Route of Flight:	Mountainous, flight within 100m of obstacles over 165m	Unfamiliar operating area	Familiar, level terrain	
Total Risk Score:				0
HIGH RISK	MEDIUM RISK		LOW RISK	
Life or Limb situations only	Seek HQ Approval	Requires UAV Team lead Approval	Cleared	
9-12	13-18	19-22	23-27	
Conducted by Name:			Signed off by Name:	
Signature:			Signature:	
Date:			Date:	

PROPERTY INFORMATION

for properties within the flight area

Property Information			
Date:			
Address or GPS			
Owner/Manager Name:		Owner/Manager #:	
Owner/Manager email:			
Permissions granted: (Y/N)		Owner/Manager Signature:	
Team Contact Person:			
Notes:			

Property Information			
Date:			
Address or GPS			
Owner/Manager Name:		Owner/Manager #:	
Owner/Manager email:			
Permissions granted: (Y/N)		Owner/Manager Signature:	
Team Contact Person:			
Notes:			

print/copy as many sheets a required.



Flight Logs (complete 1 for each site/map or change in crew)

Mission Date:		Mission Time:	
Location:		Response Name:	
Pilot in Command:		GPS (decimal format)	
Visual Observer:		Airframe:	
Mission Planner:		Operations Manager:	
Requesting Agency:			

SITE:		MAP:	
GPS of LZ:		GPS of Alt LZ:	
Pilot in Command:		Ground Supervisor:	
Visual Observer:		Mission Planner:	
Mission Planner:		Area Covered (ha):	
Airframe:		Airframe SN or Unit #:	
Camera Used		GSD:	
Flight Altitude		Video Captured:	<input type="checkbox"/>
Nadir Photos	<input type="checkbox"/>	Oblique Photos:	<input type="checkbox"/>

PER FLIGHT INFO	Flight #: 1	Flight #: 2	Flight #: 3	Flight #: 4	Flight #: 5	Flight #: 6
Take-off time:						
Wind Speed						
Battery number:						
Operating Temp:						
Duration of flight:						
Problems?	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
(if yes, include notes)						

print/copy as many sheets a required.