

[INSERT MISSION LOGO]

# Flight Operations Manual

For

[INSERT MISSION NAME]

June 2021

## Table of Contents

Table of Contents.....	2
1 Organization and Accountabilities.....	5
1.1 General.....	5
1.2 Distribution .....	5
1.3 Key Words Defined .....	5
1.4 Manual Deviations .....	5
1.5 Standard Operating Procedures .....	6
2 Safety Management System (SMS).....	7
2.1 General.....	7
2.2 Purpose .....	7
2.3 Safety Policy .....	7
2.3.1 Safety Risk Management (SRM) Performance Goals.....	7
2.4 Safety Assurance.....	8
2.5 SMS Promotion .....	8
3 Standard Operating Procedures .....	11
3.1 Pre-Flight Requirements .....	11
3.1.1 General.....	11
3.1.2 Flight Time and Duty Limitations .....	11
3.1.3 Responsibilities and Authorities.....	11
3.1.4 Trip and Journey Logbook.....	13
3.1.5 Flight Planning.....	13
3.1.6 Fuel Requirements .....	14
3.1.7 Weight and Balance .....	14
3.1.8 Aircraft Equipment.....	15
3.1.9 Crew Equipment.....	16
3.2 Passengers and Cargo .....	17
3.2.1 General.....	17
3.2.2 Passenger Handling and Briefing .....	17
3.2.3 Cargo Loading and Handling .....	18
3.2.4 Dangerous Cargo.....	19
3.3 Ground and Flight Operations .....	21
3.3.1 Checklist Usage .....	21
3.3.2 Cockpit Discipline .....	21
3.3.3 Ground Operations .....	22

- 3.3.4 Parking and Mooring.....22
- 3.4 VFR Flight Operations .....22
  - 3.4.1 General.....22
  - 3.4.2 Day VFR .....23
  - 3.4.3 Night VFR.....24
  - 3.4.4 Flight Reporting.....24
  - 3.4.5 Severe Weather .....25
  - 3.4.6 Distress Messages .....25
- 3.5 IFR Flight Operations.....25
  - 3.5.1 General.....25
- 3.6 Takeoff and Landing Requirements .....25
  - 3.6.1 General.....25
  - 3.6.2 All Operations (Take-off and Landing Performance Requirements).....25
  - 3.6.3 Floatplane Specific Operations .....27
- 3.7 Fuel and Oil Requirements.....27
  - 3.7.1 General.....27
  - 3.7.2 Fuel Sumps .....27
  - 3.7.3 Refueling operations .....27
- 3.8 Special Operations .....27
  - 3.8.1 Airdrops General .....27
  - 3.8.2 Airdrop Procedure.....28
  - 3.8.3 Aerial searches .....29
- 4 Qualifications and Training .....31
  - 4.1 Flight Crew Licenses and Ratings .....31
  - 4.2 Flight Crew Qualifications and Competency.....31
    - 4.2.1 Training .....32
    - 4.2.2 IFR Training .....34
    - 4.2.3 Emergency Procedure Training.....34
    - 4.2.4 Standards Oversight.....35
    - 4.2.5 Other personnel, training requirements.....35
- 5 Maintenance Procedures.....37
  - 5.1 General.....37
  - 5.2 Person Responsible for Maintenance .....37
  - 5.3 Maintenance Procedures.....37
  - 5.4 Maintenance Control System.....39

5.5 Flight Test Procedures.....39

6 Security Procedures .....41

6.1 General.....41

6.2 Preventative Measures .....41

Appendix A: Risk Assessment Tool “The Mirror” .....43

Appendix B: Airworthiness Checklist .....44

Appendix C: Weight and Balance Form .....45

Appendix D: Emergency Response Plan.....46

Appendix E: Trip Debrief/Hazard/Incident Report Form .....47

Appendix F: Refueling Operations .....48

INREACH SATELLITE COMMUNICATIONS OUTLINE .....51

    Basic Operation and Maintenance.....51

    Operational Use .....51

    Emergency Response and Registration.....51

# 1 Organization and Accountabilities

## 1.1 General

- 1) This manual contains the guidance and policy to ensure safety and efficiency in operating light airplanes for mission field wheel and float applications.
- 2) [MISSION NAME] encourages feedback and suggestions on improving policies and procedures outlined in this manual to enhance the overall safety of flight operations.

## 1.2 Distribution

- 1) A copy of this manual will be supplied to the following:
  - a) Each pilot who will fly aircraft owned by [MISSION NAME];
  - b) The [MISSION NAME] board members;
  - c) The mission project team; and
  - d) Aircraft with the following registration numbers:
    - i) [AIRCRAFT 1]
    - ii) [AIRCRAFT 2].

## 1.3 Key Words Defined

- 1) The following words will be used throughout this manual. The associated definitions apply.
  - a) “Will” and “Shall” mean a mandatory requirement.
  - b) “Should” is used as a recommended or preferred method. Not mandatory.
  - c) “May” is suggested as a means of compliance.
  - d) “Safety Pilot” is a certified flight instructor or another pilot rated/trained in the category and class of aircraft for the type of operations to be conducted.

## 1.4 Manual Deviations

- 1) All personnel directly involved with the operation of aircraft owned, leased, or operated under [MISSION NAME] shall be familiar with this flight operations manual. All aircraft operations will be conducted in accordance with all applicable CARs, local and national laws, manufacturers’ aircraft manuals/ limitations and this manual. Deviations from this manual are permitted in the interest of safety when it is necessary to protect the passengers, crew and aircraft from events that are not included herein.

## 1.5 Standard Operating Procedures

- 1) Standard operating procedures (SOPs) are outlined in Section 3 and provide the pilot-in-command (PIC) with guidance and standardization for both routine and non-routine, potentially hazardous situations. These procedures include predetermined mitigations to identified and forecast hazards that will promote safety and efficiency for the mission flight operations.
- 2) Whenever possible, the PIC will consult a safety pilot if a situation arises that is not addressed by an SOP.

### 1.1.1 Pilot-in-Command

- 1) The PIC is directly responsible for, and is the final authority as to, all decisions regarding the operation of the aircraft.
- 2) The PIC has the authority to conduct or not conduct the flight, change destination, route, or departure as he/she sees fit to maintain operational safety.
- 3) The duties of the PIC include:
  - a) Checking weather, applicable NOTAMs, fuel, oil and oxygen requirements;
  - b) Determining weight and balance;
  - c) Ensuring all flight planning requirements have been met;
  - d) Ensuring their license, medical certificate, passport, and visa are current;
  - e) Operating mission aircraft as per SOPs and aircraft limitations;
  - f) Ensuring compliance with Customs, Immigration, and cabotage laws;
  - g) Completing post flight duties, including notifying an assigned individual at the company of any changes to the itinerary;
  - h) Using the Risk Assessment Tool (Appendix A) to identify level of risk on a daily basis to ensure all associated risks are mitigated to the lowest possible level; and
  - i) Recording flight times and aircraft defects.

End of Section 1

## 2 Safety Management System (SMS)

### 2.1 General

- 1) The safety management system (SMS) is a process used by [MISSION NAME] to identify the hazards and associated risks that are inherent in flight operations. Once identified, they are assessed, and an action plan developed with appropriate mitigation to eliminate the hazards or reduce the associated risk to an acceptable level. The mitigation is then implemented and tracked to ensure the measures are appropriate and effective. All of this is carried out within our policy framework to achieve specified safety management goals and objectives.

### 2.2 Purpose

- 1) The purpose of this SMS is to manage safety proactively and effectively by integrating control of risk into normal day-to-day business practices. This is done by:
  - a) Obtaining consistent and optimal aircraft and human performance;
  - b) Identifying and managing safety risks specific to [MISSION NAME]; and
  - c) Actively supporting the SMS.

### 2.3 Safety Policy

- 1) While utilizing aircraft for mission related activities is a productive component of operations at [MISSION NAME], it is not the primary focus. Mission pilots and AMEs are uniquely susceptible to being distracted with non-flying responsibilities, thoughts, pressures and commitments that might jeopardize safety. Safety is an important operating principle and an essential part to all measurements of success at [MISSION NAME]. Aviation safety in particular is the responsibility of [INSERT ACCOUNTABLE EXECUTIVE/DIRECTOR], as well as the pilot-in-command (PIC). SMS is the cornerstone of this flight operations manual and forms the core of [MISSION NAME]'s safety efforts toward flying excellence. Risk mitigation to the lowest possible level is the target of all mission operations.

#### 2.3.1 Safety Risk Management (SRM) Performance Goals

- 1) The PIC is the judge as to whether the aircraft shall takeoff and where it shall land, taking into account all factors of his or her current qualifications and personal condition for the envisioned flight. Furthermore, the PIC is responsible for determining that the aircraft is airworthy, and that airport, airspace and weather conditions are within legal and acceptable parameters. The PIC will exercise this responsibility effectively and will use all available resources to make appropriate and effectively conservative decisions.
- 2) Each PIC will perform their duties giving primary concern for their own safety as well as that of their passengers to include fellow employees, customers, vendors and the property and equipment entrusted to their care.

- 3) The PIC will determine the applicable risks and mitigations throughout the trip scheduling, pre-trip planning, and trip execution phases by using this manual as guidance, to include completion of the Risk Assessment Tool: “The Mirror” (see Appendix A). The Mirror is designed to be used before each flight to mitigate associated risk to the lowest possible level.

## 2.4 Safety Assurance

- 1) In order to identify emerging hazards and risks as well as monitor effectiveness of current mitigation efforts, a tracking system (see Appendix E, Trip Debrief/Hazard/Incident Report Form) to record issues and events for periodic review will be implemented that encompasses the following areas:
  - a) Flight Operations Manual: usefulness/updating;
  - b) Risk Assessment Tool: usefulness/updating;
  - c) Aircraft Checklist: accuracy/validation;
  - d) Airplane Flight Manual/Pilot Operating Handbook: review/validation;
  - e) Maintenance and Ground Handling: interface/procedures;
  - f) Airworthiness and Maintenance: currency/documentation;
  - g) Weight and Balance: accuracy/validation; and
  - h) Pilot Training: quality control/documentation.
- 2) In addition, ongoing reference to external resources, such as the following examples, should be explored to stay abreast of the latest aviation safety trends and information:
  - a) Mission Safety International - <http://www.msisafety.org>
  - b) FAA Safety – [www.faasafety.gov](http://www.faasafety.gov)
  - c) National Transportation Safety Board – [www.nts.gov](http://www.nts.gov)
  - d) Aviation Safety Reporting System – <http://asrs.arc.nasa.gov>
  - e) AOPA Air Safety Institute – [www.aopa.org/asf](http://www.aopa.org/asf)
  - f) Skybrary Aviation Safety Reference – [www.skybrary.aero](http://www.skybrary.aero)

## 2.5 SMS Promotion

- 1) [MISSION NAME] will work diligently to ensure that a positive safety culture prevails throughout the organization. In order to achieve that objective, open communication with all persons involved in flight operations will be encouraged and safety information will be



exchanged. These persons may include non-employee ground-handling personnel, aircraft maintenance technicians, other aviation associates and vendors, safety pilots, mission colleagues and family members, as needed. In addition, training on the concepts of SMS to include the safety tenets embodied in this flight operations manual will be provided to all persons involved in flight operations (reference Section 4.1.2).

End of Section 2

### 3 Standard Operating Procedures

#### 3.1 Pre-Flight Requirements

##### 3.1.1 General

- 1) To act as a crew member of missionary aircraft, personnel shall:
  - a) Have successfully completed applicable qualifying training;
  - b) Be undergoing applicable qualification training; or
  - c) Have appropriate authorization from **[MISSION NAME]**.
- 2) The pilot in command (PIC) shall be familiar with all available information appropriate to an intended flight prior to its commencement. For VFR flights outside the local area, such information shall include weather reports and forecasts, fuel requirements, NOTAMs, Flight information publications and alternate considerations if the flight cannot be completed as planned.

##### 3.1.2 Flight Time and Duty Limitations

- 1) All pilots shall manage their time to be well rested for flight operations. Observing flight and duty time limitations as described in this section, pilots shall not fly fatigued.
- 2) The duty day starts when the pilot arrives at work, regardless of whether or not that work is related to aviation and terminates upon completion of the last flight of the day.
- 3) A pilot shall have a minimum of 10 hours rest between duty days.
- 4) All pilots are to ensure that they do not exceed the flight and duty time limitations contained in the relevant regulations or those outlined below, whichever is most limiting.
  - a) The maximum duty day is 14 hours;
  - b) Flight hour limits:
    - i) Nine (9) flight hours per duty day;
    - ii) 40 flight hours in a consecutive seven (7) day period;
    - iii) 80 flight hours or 250 sectors per calendar month (whichever occurs first); and
    - iv) 900 flight hours per calendar year.

##### 3.1.3 Responsibilities and Authorities

- 1) The pilot designated as the pilot in command (PIC) shall have command of the aircraft, crew and all persons on board, and shall be responsible for the safe execution of the flight.

Notwithstanding anything contained in this manual or any other regulations, in an emergency, the PIC shall take action to preserve the safety of the aircraft, crew and passengers.

- 2) The PIC will authorize and conduct all flights utilizing guidance from this manual to include the safety risk management performance goals outlined in Section 2.1.3.
- 3) The PIC is responsible for the following:
  - a) Conducting the flight in accordance with (IAW):
    - i) the flight regulations of the applicable country of operation;
    - ii) the current and approved aircraft flight manual/pilot operating handbook (AFM/POH) of the aircraft to be operated.
  - b) Ensuring all applicable licenses, certificates and permits have been obtained and verified prior to flight and are carried onboard the aircraft;
  - c) Ensuring the following documents are carried on board plus any additional documents required by local regulations:
    - i) Certificate of Airworthiness;
    - ii) Certificate of Registration;
    - iii) Proof of insurance
    - iv) Current and approved AFM/POH;
    - v) Current and approved aircraft checklist;
    - vi) Current aircraft weight and balance;
    - vii) Aircraft Minimum Equipment List;
    - viii) Aeronautical Charts appropriate for the flight;
    - ix) Flight Log;
    - x) Journey Logbook;
    - xi) Maintenance Log including Maintenance Release;
    - xii) Load Sheet; and
    - xiii) [MISSION NAME] Flight Operations Manual (an electronic version is acceptable).
- 4) Each pilot is responsible for evaluating all pertinent information available to him/her to determine that each flight can safely be completed as scheduled.

- 5) Pilots shall not act as PIC of an airplane carrying passengers unless they have met the following currency requirements:
  - a) **Day Wheel Operations.** Within the preceding 90 days carried out at least three takeoffs and three landings to a full stop while acting as pilot in command or as pilot acting in command under supervision; or
  - b) **Day Floatplane operations.** Within the preceding 90 days carried out at least three takeoffs and three landings to a taxi speed on the water while acting as pilot in command or as pilot acting in command under supervision.

#### 3.1.4 Trip and Journey Logbook

- 1) A daily trip log/manifest is to be maintained for each flight including;
  - a) PIC and second-in-command (2IC) as applicable;
  - b) Departure and destination;
  - c) Date, time off and time down;
  - d) Passenger names;
  - e) Authorization, agency and/or purpose of flight;
  - f) Cargo weight and description; and
  - g) Remaining fuel at shutdown.
- 2) The Journey Log will be carried in the aircraft as per Transport Canada regulations, it will be kept accurate and current on a daily basis. Flight information may be transcribed from the trip logs for each flight or series of flights.

#### 3.1.5 Flight Planning

- 1) All flights, except those within the [MISSION NAME] defined local area, require a written record of pertinent flight information prior to departure. This may be in the form of:
  - a) A flight plan filed with local Air Traffic Control;
  - b) A written flight plan left with a responsible person at the point of departure; or
  - c) A company note: confirmed and recorded radio or acceptable text message report made with a mission flight follower before or upon departure.
- 2) Each flight plan or company note shall contain at least the following information (recurring information may be stored):
  - a) Aircraft identification;

- b) Aircraft type/special equipment;
- c) True airspeed;
- d) Point of departure;
- e) Time of departure;
- f) Initial cruising altitude;
- g) Proposed route of flight;
- h) Destination;
- i) Estimated time enroute;
- j) Fuel on board (in hours and minutes);
- k) Alternate airports;
- l) Pilots name and address;
- m) Number of persons on board (including pilot);
- n) Color and markings of aircraft; and
- o) Remarks.

#### 3.1.6 Fuel Requirements

- 1) The minimum fuel required for VFR flight shall be:
  - a) Sufficient for a propeller driven aircraft to fly to the destination as flight planned, plus
  - b) An additional 60 minutes of fuel at a normal cruising consumption.

#### 3.1.7 Weight and Balance

- 1) The weight and balance and C of G shall be calculated for each flight as per the guidance in the AFM/POH using the current forms.
- 2) Sample loading forms shall be prepared and carried onboard the aircraft.
- 3) The Pilot-in-Command shall ascertain before each flight that the aircraft is loaded within approved weight and balance limits.
- 4) Whenever the payload is 75% or greater than the total allowed for that particular takeoff, the PIC must verify takeoff weight by either weighing or confirming accurate weights (taken by other people) and measuring fuel load.

### 3.1.8 Aircraft Equipment

- 1) A thorough interior and exterior preflight inspection of the aircraft shall be conducted prior to the first flight of the day.
- 2) Altimeter, Clocks and Radio
  - a) An altimeter is unserviceable if the error exceeds plus or minus 50 feet when being ground checked with a known altimeter setting.
  - b) Aircraft clocks shall be synchronized and set to UTC; and
  - c) Normally aircraft shall not be flown without a serviceable two-way radio.
- 3) Emergency Equipment
  - a) Fire Extinguishers
    - i) All aircraft are fitted with a Halon 1211-1301 type fire extinguisher in the pilot compartment. All pilots shall be familiar with the location and method of operation of same.
  - b) Survival and First Aid Kits
    - i) The Pilot in Command will ensure that that a suitable and serviceable survival and first aid kit is fitted to the aircraft. Contents should be evaluated for condition and completeness annually or anytime the kit is accessed.
  - c) Life rafts or flotation devices and any other survival equipment (as required).
  - d) Emergency Locator Transmitter (ELT)
    - i) All aircraft are fitted with an emergency locator transmitter, normally located towards the rear of the aircraft. The transmitter will be automatically be activated by an inertia switch within the in the ELT upon an impact with sufficient force. The unit can also be manually activated if required by the pilot via switch mounted on the instrument panel in the cockpit. The battery within the ELT will provide at least 48 hours of continuous transmission on 406 MHz.
  - e) In-Reach satellite tracking
    - i) Satellite tracking must be charged and turned on with tracking activated for all flights. (See Appendix G: InReach Satellite Communications)
    - ii) All pilots must have a clear understanding of all relevant functions including the use of text messaging where it is applicable for operational communications.
    - iii) Alternate satellite tracking options may be approved by [MISSION NAME].

- 4) Aircraft Minimum Equipment List (MEL)
  - a) Until a Master MEL is established for the type of aircraft, the guidance in the following para IAW CARS 605 will be followed.
  - b) The following equipment shall be serviceable to operate under a day VFR flight:
    - i) Altimeter;
    - ii) Airspeed Indicator;
    - iii) Magnetic Compass;
    - iv) Tachometer;
    - v) Oil Temperature Gauge;
    - vi) Oil Pressure Gauge;
    - vii) Fuel Gauge (can be a visual indication of the level);
    - viii) Manifold Pressure Gauge (if applicable); and
    - ix) A two-way radio.
  - c) A pilot may conduct a take-off with an aircraft that has equipment that is not serviceable or has been removed provided:
    - i) The unserviceability has been discussed with **MISSION NAME** maintenance personnel;
    - ii) Aviation safety is not affected;
    - iii) If a flight permit is required, the aircraft is operated IAW the conditions of the flight permit specifically issued for that purpose;
    - iv) where the unserviceable equipment is not removed from the aircraft, it is isolated or secured so as not to constitute a hazard to any other aircraft system or to any person on board the aircraft;
    - v) the appropriate placards are installed as required; and
    - vi) an entry is made in the journey log, as applicable.

### 3.1.9 Crew Equipment

- 1) Appropriate maps, charts and FLIPs required to accomplish the intended mission shall be available to the aircrew during the flight.



- 2) Each pilot shall at all times carry in the flight compartment when on duty, the following items (digital format is acceptable where applicable):
  - a) Timepiece;
  - b) Course and distance calculator;
  - c) Serviceable pen;
  - d) Spare batteries or backup battery as required essential devices;
  - e) ATC Flight Plan (where applicable);
  - f) Company Operations Manual;
  - g) Visual navigation charts and/or instrument enroute and terminal area charts as required to conduct the flight;
  - h) Current area or route forecasts with terminal area forecasts as required by regulations; and
  - i) NOTAMs that are pertinent to the region or particular flight.
- 3) An inflatable PFD (Personal Floatation Device) shall be worn by all flight crew for float operations or when flights are operated beyond gliding distance from land. The PFD must have a CO2 cartridge with manual inflation (not automatic).

## 3.2 Passengers and Cargo

### 3.2.1 General

- 1) The following information will be recorded on the Manifest or Trip Log and a copy left with the dispatcher:
  - a) The name, weight and destination of each passenger; and
  - b) The type, weight and destination of all cargo uplifted.

### 3.2.2 Passenger Handling and Briefing

- 1) The name, weight and destination of each passenger shall be recorded on a Manifest or Trip Log and a copy retained with the dispatcher.
- 2) An inflatable PFD (Personal Floatation Device) shall be worn by all passengers for float operations or when flights are operated beyond gliding distance from land. The PFD must have a CO2 cartridge with manual inflation (not automatic).
- 3) Prior to starting the engine, the PIC shall provide a safety briefing to all passengers using the Safety Briefing Card (Spanish and English). As a minimum the following should be briefed to

the passengers:

- a) The flight time and the weather enroute;
  - b) how to operate the seatbelts;
  - c) location of the exits and how to use the latch releases; and
  - d) when and how to inflate the PFD.
- 4) During the beaching or docking phase of float operations, passengers shall not exit the aircraft until:
- a) The propeller has stopped;
  - b) The engine controls secured; and
  - c) The direction to exit has been clearly directed by the PIC.
- 5) Passengers shall not remain inside the aircraft during refueling unless the following criteria is met:
- a) At the discretion of the pilot in command, a sick or injured person may remain in the aircraft provided another person is designated (and able and readily available) to help with evacuation in the event of a fire.
- 6) Passengers shall not be carried when Dangerous Cargo listed below in 3.2.3 is carried inside the cabin with the following exemption:
- a) Lithium batteries contained in cordless tools, laptops and portable charging batteries

### 3.2.3 Cargo Loading and Handling

- 1) All crew and passenger emergency access paths in the aircraft shall be kept clear of baggage, cargo and equipment.
- 2) The PIC is, at all times, solely responsible for the loading of his/her aircraft and is to verify that cargo is tied down and restrained adequately for the operation.
- 3) All cargo shall be securely tied down before each flight.
  - a) Emphasis should be on tieback. Cargo straps and ropes should be attached so that the load is tied rearward. Ensure the load is secured to prevent the cargo load from sliding aft. A load shift of 6 inches to a foot will have significant impact on CG jeopardizing control of the aircraft.
  - b) Cargo nets should be tied securely along the front and sides so that cargo cannot slide out from under the net. The net should be pulled under the front of the cargo and tied back, pulling the load away from any occupied passenger seats.

### 3.2.4 Dangerous Cargo

- 1) All pilots shall have annual dangerous cargo training (WHMIS).
- 2) The carriage of passengers with Dangerous Cargo (DC) in the cabin is strictly prohibited.
- 3) Exceeding caution should be exercised during the loading and transport of any materials that could be hazardous to crew, passengers or the aircraft.
- 4) DC listed in Para 5 below shall be carried in the float compartments to the maximum extent possible with consideration of the damp storage environment and weight limitations.
  - a) If Fuels, Flammables and Compressed Gases as identified below are carried in the float compartment they may be carried without restriction on quantity.
- 5) The following DC is permitted to be carried by [MISSION NAME] aircraft if packaged and in the appropriate quantity IAW *Transportation of Dangerous Goods (TDG) Regulation, part 12 - Air*:
  - a) **Fuel, Oils and Lubricants:**
    - i) Smoking is strictly prohibited.
    - ii) Damaged, leaking or unsealed drums will not be accepted as cargo.
    - iii) Empty fuel containers shall be subject to the same precautions as full ones.
    - iv) Under no circumstances shall containers be opened in flight
    - v) All containers shall be carried in an upright position, properly secured, and if bungs are installed, they must be on top;
    - vi) Fuel powered equipment may be carried:
      - (1) Without restrictions in the float compartments of the floatplane; or
      - (2) In the cabin if properly prepared for flight as follows:
        - (a) All fluids – including water – must be fully drained before loading;
        - (b) To protect against leakages, the small engine should have absorbent material such as a blanket underneath to prevent any leakage on aircraft surfaces; and
        - (c) At the pilot's discretion, the small engine should be secured with ratchet straps to a small crate that extends beyond the engine. A small engine that is just resting on a pallet is liable to tip and tilt about. The engine and crate must then be secured to prevent movement within the aircraft.

vii) The following fuels are permitted:

- (1) Camping Fuel;
- (2) Propane;
- (3) Drummed Fuel;
- (4) Jerry Cans;
- (5) Marine Fuel Containers;
- (6) Kerosene; and
- (7) Lighter Fluid.

b) **Batteries:**

- i) All cells and battery packs must be individually protected to prevent short circuits, e.g.:
  - (1) Exposed terminals can be taped over.
  - (2) Individual cells or battery packs can be in their original retail packaging or stored in a protective pouch or case, or a separate plastic bag.
- ii) Lead Acid Batteries (such as Vehicle Batteries) may be carried;
  - (1) In the float compartment of a floatplane subject to the following restrictions:
    - (a) Batteries containing corrosive liquid such as electrolyte will only be carried if packaged in a larger container with a lid. The space between the battery and the outside container must be packed with an absorbing and neutralizing agent; and
    - (b) Battery acid for batteries will only be carried if packaged in a sealed container and the space between the acid and outer container be packed with an absorbing and neutralizing agent.
  - (2) In the cabin of the aircraft with the following limitations:
    - (a) A maximum of two (2) sealed lead acid (SLA) non-spillable batteries with a maximum rating of 12 volts / 8.3 Amps (100 Watt hours (Wh)) are permitted in **carry-on baggage only\***.
- iii) Lithium Ion Batteries (Cordless Tool, Laptop and Portable Charging Batteries);
  - (1) Lithium Ion Batteries – max 2 up to 160 Wh must be accessible to passengers or crew in the cabin of the aircraft.

- c) **Flammables:**
    - i) Aerosols;
    - ii) Glues and Adhesives; and
    - iii) Paint.
  - d) **Compressed Gases:** (Quantity to be identified)
    - i) Bear Spray;
    - ii) First Aid Kits with Oxygen;
    - iii) Welding Gases (Oxygen, Acetylene, Nitrogen, Helium); and
    - iv) Fire Extinguishers.
  - e) **Explosives:**
    - i) Ammunition for Firearms;
      - (1) Firearms are permitted if stored in a locked container under the pilot's seat.
    - ii) Bear Bangers; and
    - iii) Flares.
- 2) The following DC is **prohibited**:
- a) All Explosives (except as permitted in para 2. B. v. above);
  - b) All Corrosives including cleaning chemicals (Bleach and Industrial Grill Cleaner); and
  - c) All Fertilizers.

### 3.3 Ground and Flight Operations

#### 3.3.1 Checklist Usage

- 1) All flight operations will be conducted in accordance with the manufacturer's checklist. These checklists prescribe the normal procedures to be followed for each aircraft type and every pilot shall follow the checklist as the manufacturer intended; and
- 2) All pilots are to be familiar with the panel mounted check box usage procedure as part of the cockpit flow. (instructional document attached).

#### 3.3.2 Cockpit Discipline

- 1) During key phases of ground and flight operations, the PIC is responsible for creating a sterile cockpit by eliminating undue distractions and extraneous cockpit conversation that do not

apply directly to the operation of the airplane. Personal Electronic Devices (PEDs) such as cellphones and tablets shall not be used below 1000' AGL.

- 2) When handing over control of the aircraft to another pilot:
  - a) The intention shall be indicated by saying "you have control"; and
  - b) The transfer of control shall not take place until the recipient states "I have control".

### 3.3.3 Ground Operations

- 1) Pilots are to always clear the propeller area as well as the area behind the aircraft of all obstructions and/or personnel or animals. Prior to starting, a further visual check shall be made and a "Clear prop" announcement made.
- 2) The only persons authorized to taxi [MISSION NAME] aircraft are:
  - a) A licensed Pilot qualified on type; or
  - b) A Mechanic/Engineer who is rated/endorsed for the type of aircraft concerned.
- 3) During taxi, use a good visual scan to ensure the aircraft remains clear of obstructions, construction areas, and buildings/trees/fences etc.
- 4) Avoid completing checklist items while taxiing. When there is a two-pilot crew, the second non-flying pilot can action checklist items.
- 5) A sensible and conservative taxi speed shall be used at all times, with due consideration given to surroundings and conditions.

### 3.3.4 Parking and Mooring

- 1) All aircraft parked shall be secured against movement and, where applicable wheel chocks, safety pins, and control locks shall be installed.
- 2) All aircraft moored shall:
  - a) Have all control locks, safety pins and other safety devices installed;
  - b) Be inspected daily to ensure they are safely and securely moored; and
  - c) At night, display a white light, visible for at least 2 miles under ideal weather conditions.

## 3.4 VFR Flight Operations

### 3.4.1 General

- 1) Visual Flight Rules are premised on the "see and be seen" principle. As pilots are responsible for their own separation from other aircraft, conditions must exist that permit sufficient opportunity to see and avoid other air traffic and ground obstructions by day or night. Pilots

should remember that established weather criteria are minima and that they should allow a greater margin for safety when circumstances permit, particularly in terminal areas or when reduced visibility or cloud conditions make VFR flights questionable.

### 3.4.2 Day VFR

- 1) Aircraft shall not be flown below 1 000 feet AGL or above water except when:
  - a) Taking off, landing or conducting an authorized approach to an aerodrome;
  - b) Low flying has been authorized for air-drop practice and operations as approved by **[MISSION NAME]**;
  - c) Required by weather deteriorating to below minimum conditions on a VFR flight in order to maintain vertical separation from cloud while initiating alternative action. Not below 500 feet AGL or above water.
- 2) VFR weather ceiling and visibility requirements,
  - a) The more restrictive of the following is permitted:
    - i) The country aviation regulations for ceiling and visibility requirements, or
    - ii) For planning: a ceiling of 1,500 feet and minimum flight visibility of 3 statute miles; and
    - iii) In flight: a ceiling of 1,000 feet is authorized provided the aircraft can remain clear of cloud.
- 3) Daylight Requirements for flight planning.
  - a) All landings should be planned to be completed no later than one (1) hour prior to sunset.
  - b) The one-hour requirement may be reduced to 30 minutes provided:
    - i) The pilot has an unrestricted field position as specified in Chapter 4;
    - ii) The destination airport has a paved, lighted runway which is suitable for the aircraft type and crew training;
    - iii) The anticipated destination weather is greater than a ceiling of 2,000 feet and a visibility of 5 sm.
- 4) Water Operations Requirements
  - a) A local area database developed by **[MISSION NAME]** for float operations and stored on iPads(EFB) will be used as an in-flight reference for pilots on the hazards and specific procedures needed at each planned landing place. The database should contain:
    - i) Specific details on each landing place (see MAF form);

- (1) How the water current speed affects docking and where to approach from in the various conditions;
- (2) The [Beaufort Sea scale](#) can be used to help determine wind strength based on water and wave conditions. Water factors are very important when determining whether or not it is safe to land and as minimum should contain the following:
  - (a) Tides;
  - (b) Wave height and direction;
  - (c) Wave Frequency;
  - (d) Dry season vs wet season water levels;
  - (e) Prevailing wind. When combined with wave and swell direction may preclude a safe landing.
- (3) Hazards in approach to landing and take-off such as:
  - (a) Bends in rivers;
  - (b) Sand bars;
  - (c) Riverbanks;
- (4) How to conduct docking or beaching;
- (5) How to conduct loading and/or unloading from:
  - (a) Docks;
  - (b) Canoes or boats.
- (6) Photos of the landing area.

#### 3.4.3 Night VFR

- 1) Night VFR is not permitted outside of the United States.

#### 3.4.4 Flight Reporting

- 1) Normally, flight reports are automatically made by the satellite tracking system in the aircraft directly to dispatch.
- 2) In the following circumstances Flight reports shall be made every 15-20 minutes verbally with dispatch:
  - a) If satellite tracking is unserviceable or not accurate;



- b) In marginal weather conditions; or
- c) When making a diversion or detour.

#### 3.4.5 Severe Weather

##### 1) Wind

- a) The maximum allowed wind for take-off or landing is 30 knots
- b) The maximum allowed crosswind component is 15 knots or as per company SOP/POH whichever is lower.

##### 2) Thunderstorms

- a) Fueling Operations will cease when active lightning exists within 10 nm,
- b) No take-off or landing shall be conducted with a thunderstorm within 10 nm of the runway, airstrip or water take-off area. The associated hazards of hail, gust fronts, and wind shear pose too great a risk for aviation safety.
- c) Enroute: All thunderstorms are hazardous to aviation and shall be avoided by 10 nm.

#### 3.4.6 Distress Messages

- 1) All distress messages shall be made in accordance with the requirements of the local regulating authority.

### 3.5 IFR Flight Operations

#### 3.5.1 General

- 1) The aircraft is not certified for IFR and as such, no flights will be planned under IFR.

### 3.6 Takeoff and Landing Requirements

#### 3.6.1 General

- 1) Before starting, taxiing, taking off, or landing an aircraft at an aerodrome, the PIC shall be satisfied that there is no likelihood of collision with another aircraft, a person, animal, or vehicle.

#### 3.6.2 All Operations (Take-off and Landing Performance Requirements)

- 1) Pilots of [MISSION NAME] shall use a standardized safe abort point policy developed by [MISSION NAME] flight operations in accordance with the guidance found in this section.
- 2) No pilot shall attempt to takeoff from any location unless weather conditions allow for the safe maneuvering to an immediate landing, or if he/she is certain the conditions are

acceptable for proceeding to another safe landing location.

- 3) Unless in emergency conditions, no land takeoff shall be made from ramps, taxiways, roads, etc. For normal operations, takeoff is only approved from designated runways, airstrips or water takeoff areas.
- 4) No takeoff shall be attempted unless it has been determined that the aircraft will reach liftoff speed within the first 75% of the usable runway surface or water takeoff area.
  - a) The only exception to this rule will be in the case of those airstrips that have an abrupt drop-off at the end of more than 50 feet. In this case, up to 90% of the length may be used to achieve liftoff speed.
- 5) The takeoff run (distance required to reach liftoff speed) is first determined by calculation (performance charts) at lighter loads, and gradually increased once satisfactory performance is confirmed.
- 6) Obstacle clearance of 50 feet minimum is required for all takeoffs. In order that this obstacle clearance be achieved, it may be necessary to reduce the payload or fuel at the discretion of the pilot in command.
- 7) Prior to each takeoff, the pilot shall select a point along the takeoff path where an abort must be initiated if sufficient airspeed and/or performance has not been achieved. The selected point will, by necessity, vary from one takeoff to the next and will be affected by runway and weather conditions as well as the aircraft load. 50% runway length is considered a typical "starting point" when calculating abort points. This point shall be briefed to the other pilot in a two-pilot crew.
  - a) When using an airstrip with an abrupt drop-off at the end of more than 50', the abort point must be selected to permit the aircraft to come to a complete stop prior to the runway end. Factors that affect braking performance: weight; speed; elevation, and surface condition (standing water, rainfall etc.) are critical and must be considered.
- 8) Abort point variables include density altitude, wind, slope, runway surface, engine condition, actual gross weight, pilot experience and technique, mechanical condition etc. Determining the abort point is to be the responsibility of the pilot-in-command and shall be evaluated prior to each takeoff. Aircraft performance charts from the POH, environmental conditions, aircraft climb gradient and pilot experience are factors that must be considered when making this decision.
- 9) No takeoff shall be begun, or continued, when people or animals are present on the airstrip portion required for takeoff or abort. For water takeoffs no boats or obstacles moving or drifting near the takeoff area.
- 10) In consideration of landing in confined areas either water or land where take-off distance is the limiting factor, pilots shall choose and communicate (with a 2 pilot crew) the Landing Abort Point. This allows the crew to make a decision early and then react accordingly if a

safe landing cannot be made.

### 3.6.3 Floatplane Specific Operations

- 1) New landing locations, where reasonably possible, shall be visited or researched in advance to gain as much local knowledge as possible regarding prevailing winds, currents, wave actions, underwater hazards, beaching areas etc.
- 2) Prior to landing on the water complete a landing assessment to ensure that a safe landing and takeoff can be conducted.
  - a) This shall be accomplished by at least one survey pass at an altitude of 500' and between 80 and 90 knots; and
  - b) Where takeoff area is limited at least one timed pass shall be conducted to ensure sufficient takeoff length is available taking into consideration weight, winds, currents, temperature and elevation.

## 3.7 Fuel and Oil Requirements

### 3.7.1 General

- 1) All pilots are required to be familiar with and adhere to the power settings and fuel consumption rates as laid down in the aircraft handbook. Failure to comply with this regulation may result in engine damage or reduced service life.
- 2) For minimum and maximum oil requirements, refer to the aircraft Pilot Operating Handbook (POH).

### 3.7.2 Fuel Sumps

- 1) Fuel sumps shall be drained thoroughly, checking for water and contaminants:
  - a) Before the first flight of the day;
  - b) Every time the aircraft is refueled; and
  - c) At the first landing following refueling.

### 3.7.3 Refueling operations

- 1) Conduct refueling operations in accordance the detailed guidance in Annex F - Refueling Operations.
- 2) Fueling Operations will cease when active lightning exists within 10 nm.

## 3.8 Special Operations

### 3.8.1 Airdrops General

- 1) Airdrops should be conducted with extreme caution and conducted only if essential with the following restrictions:
  - a) No solo airdrops;
  - b) Prior to conducting the actual airdrop, a practice drop shall be made at the airfield following the procedure detailed in *para d* below; and
  - c) The minimum drop altitude is 150' AGL. Drop zone height (AGL) and minimum drop altitude should be established and briefed.
- 2) Airdrops shall not be done from a floatplane.

### 3.8.2 Airdrop Procedure

- 1) The PIC and second crew member must fully brief all phases of the following procedure:
  - a) Safely overhead, recce hazards on approach and overshoot including:
    - i) Terrain;
    - ii) Trees
    - iii) Cable spans;
    - iv) Towers;
    - v) Other aircraft; and
    - vi) Balloons etc.
  - b) Conduct a wind assessment, using this establish the best run-in for the drop;
  - c) Update the barometric setting based on a known elevation such as the ocean or lake elevation etc;
  - d) Discuss low level engine failure considerations;
  - e) Brief the following:
    - i) Minimum circuit speeds and speed on final;
    - ii) Drop altitude;
    - iii) Run-in and hazards; and
    - iv) Actions in the event of an engine failure.
  - f)The PIC is to strictly focus on maintaining safe altitudes, airspeeds and obstacle clearance and will make the following calls to the second crew member:

- i) "On final for the drop";
  - ii) "Through 1000";
  - iii) "Through 500";
  - iv) "100' above"; and
  - v) "Minimums levelling".
- 2) The second crew member is responsible to conduct the actual drop and release the package. They shall provide the following guidance to the pilot on the run-in:
    - a) "Left-left" for any maneuvering required to move the aircraft left on final;
    - b) "Right" for any maneuvering required to move the aircraft right on final;
    - c) "Standby to drop";
    - d) "Drop-drop now"; and
    - e) "Bundle is away and clear, clear to climb".
  - 3) At no time is the PIC to assess the drop time/location.
  - 4) A "Stop drop" call can be made by either PIC or second crew member and must be acknowledged by the other person.

### 3.8.3 Aerial searches

- 1) The recommended crew for aerial searches is a pilot and a navigator plus two observers.
- 2) The following minimum items must be briefed as a crew prior to the flight:
  - a) Search object;
  - b) Area and plan;
  - c) Forecast and actual weather;
  - d) Bingo time; and
  - e) Communication plan (ie. update fuel, status every hour with dispatch).
- 3) The PIC is to strictly focus on maintaining safe altitudes, airspeeds, obstacle clearance and navigation during all phases of a search. The PIC is not to be considered a set of eyes for searching.
- 4) Extra care should be taken to ensure flight is not continued into adverse or unsafe conditions and that fuel reserves are not compromised.

End of Section 3

## 4 Qualifications and Training

### 4.1 Flight Crew Licenses and Ratings

- 1) All pilots at [MISSION NAME] shall have:
  - a) Commercial, Float and IFR ratings;
    - i) Minimum 500 hours TT for an unrestricted field position;
    - ii) Minimum 300 hours TT for a restricted field position.
    - iii) Minimum 100 hours TT on floats including 50 hours on type prior to any solo release in- country;
  - b) A Class 1 (commercial) medical, valid license and aviation booklet prior to deployment.
- 2) [MISSION NAME] pilots are responsible for:
  - a) Maintaining the currency and validity of their licenses and ratings; and
  - b) Ensuring that their medical certificates are valid.
    - i) Pilot medicals may lapse to Class 3 (private); and
    - ii) Upon renewal all pilots must regain a Class 1 medical.

### 4.2 Flight Crew Qualifications and Competency

- 1) Pilots must have a current flight review in the same aircraft category, class, and type (if a type rating is required) being flown.
- 2) Pilots shall not act as PIC of an airplane carrying passengers unless they have met the following currency requirements:
  - a) Day Wheel Operations. Within the preceding 90 days carried out at least three takeoffs and three landings to a full stop while acting as pilot in command or as pilot acting in command under supervision; or
  - b) Day Floatplane operations. Within the preceding 90 days carried out at least three takeoffs and three landings to a taxi speed on the water while acting as pilot in command or as pilot acting in command under supervision.
- 3) Formal training shall be completed in Canada in order to retain an IFR rating every 12 months IAW CARS 401.05 (3.1).
- 4) All pilots released as PIC for [MISSION NAME] in [Country Name] must demonstrate [Language Name] language proficiency to the following standards:

- a) Converse easily and respectfully with government, community and health officials and understand medical conditions and patient care requirements;
  - b) Clearly communicate instructions to bystanders, ground handlers/helpers and passengers as well as conduct clear passenger briefings; and
  - c) Communicate clearly in emergency situations with passengers and responders.
- 5) All pilots arriving in [Country Name] will hold a restricted field position and may be granted a **restricted solo release** allowing them the ability to fly solo to and conduct landings and take-offs at specific places provided:
- a) They have demonstrated:
    - i) Proficiency at those places; and
    - ii) Knowledge of local procedures and country regulations.
  - b) This release is granted by the [MISSION NAME] training pilot IAW the prescribed OJT program.
- 6) All pilots completing the prescribed OJT program need to be recommended by the [MISSION NAME] training pilot for an [MISSION NAME] check ride to achieve an unrestricted field position.

#### 4.2.1 Training

- 1) **As** part of initial cadre training, [MISSION NAME] recommends
  - a) that the senior pilot of the team;
    - i) gain experience in local and national procedures of the country orientation;
    - ii) build local area knowledge as required for landing orientation; and
    - iii) initiate the local database of landing areas.
  - b) Then as the PIC shares and develops the knowledge of the other mission pilots. The team:
    - i) Continue to build experience and knowledge of the local and national regulations
    - ii) Complete the local area database of all landing areas.
- 2) [MISSION NAME] will designate and maintain a Training pilot position with the following responsibilities:
  - a) Keep records of:
    - i) Licenses and Medical Certificates;



- ii) Completion dates of ratings and renewals;
  - iii) field training used to develop new pilots; and
  - iv) Alert **[MISSION NAME]** of pending lapses of currency or validity.
- b) Provide Training:
- i) In-country orientation consisting of most routes in the country and a familiarity of the possible landing places.
  - ii) Airport protocol when it comes to flight planning
  - iii) Interacting with government agencies that meets the requirements of the country
- c) Evaluate other pilots to a standard
- i) Complying with countries rules
  - ii) General competency on local procedures
- 3) Initial or annual recurrent training shall consist of at least the following:
- a) Company Flight Operations Manual;
  - b) Aircraft Type and aircraft systems;
  - c) Emergency Procedures;
  - d) Flight Planning;
  - e) Human factors (emphasis on distractions, complacency/drift and pressure);
  - f) Workload and time management in aircraft;
  - g) Effects of Fatigue on performance, avoidance strategies and mitigations; and
  - h) Training for new mission pilots shall also include:
    - i) Local country regulations and procedures;
    - ii) Use of the local area database; and
    - iii) WHMIS.
- 4) Many resources are available to assist the **[MISSION NAME]** in customizing a training program that meets the objectives of this section:
- a) Aircraft manufacturer
  - b) Type-specific ownership clubs or associations

- c) Independent CFIs, flight schools, and training facilities
- d) Flight review guidance: [www.faa.gov/pilots/training/media/flight\\_review.pdf](http://www.faa.gov/pilots/training/media/flight_review.pdf)
- e) IPC guidance: [www.faa.gov/pilots/training/media/IPC\\_guidance.pdf](http://www.faa.gov/pilots/training/media/IPC_guidance.pdf)
- f) FAA Risk Management Handbook, including single-pilot resource management: [www.faa.gov/library/manuals/aviation/media/FAA-H-8083-2.pdf](http://www.faa.gov/library/manuals/aviation/media/FAA-H-8083-2.pdf)
- g) FAA online Training Course Catalog: [www.faasafety.gov/gslac/ALC/course\\_catalog.aspx](http://www.faasafety.gov/gslac/ALC/course_catalog.aspx)
- h) NBAA VLI/TAA Training Guidelines: [www.nbaa.org/ops/safety/vlj/](http://www.nbaa.org/ops/safety/vlj/)
- i) AOPA Air Safety Institute: [www.aopa.org/asf/](http://www.aopa.org/asf/)

#### 4.2.2 IFR Training

- 1) In order to maintain an instrument scan, pilots are encouraged to practice their instrument crosscheck and instrument approaches under VFR provided:
  - a) There is a second pilot to act as a safety pilot who maintains a lookout for other VFR traffic;
  - b) The aircraft is equipped with the necessary instruments; and
  - c) There are published IFR approaches available.

#### 4.2.3 Emergency Procedure Training

- 1) While Emergency Procedure practice is encouraged it can develop into a real emergency. In order to accomplish the training safely the following guidelines shall be followed:
  - a) No passengers are on-board;
  - b) Time is available during enroute legs to conduct the training;
  - c) There is a second pilot to act as a safety pilot;
  - d) The practice will only be conducted where an emergency landing can be safely made;
  - e) A safety brief is given that identifies:
    - i) Who is the PIC for the Emergency Scenario;
    - ii) What will occur if it develops into a real emergency; and
  - f) A Training Captain can initiate a surprise emergency as part of a training scenario;
  - g) The emergency practice should be recorded in personal logbooks.

#### 4.2.4 Standards Oversight

- 1) Pilots will be evaluated periodically by an **[MISSION NAME]** training pilot.
- 2) **[MISSION NAME]** will provide the following oversight in support of mission program:
  - a) An online records portal will permit the pilots to input applicable dates to help track ratings, licenses, medicals and aviation booklet dates and provide a reminder for their renewal;
  - b) Use an approved technical evaluation course or equivalent program to check out and approve pilots prior to deployment;
  - c) Conduct in-country check rides upon the recommendation of the training pilot:
- 3) **[MISSION NAME]** will conduct the check ride for pilots upgrading to an unrestricted field position based on the recommendation of the training pilot. The check ride will include but is not limited to the following:
  - a) In-country flight planning;
  - b) Compliance with SOPs and the Flight Operations Manual;
  - c) A thorough understanding of the aircraft and emergency procedures; and
  - d) A flight that:
    - i) Consists of multiple legs and landing areas;
    - ii) Covers the variety of roles that **[MISSION NAME]** provides as part of the mission project in [Country Name];
    - iii) Allows the pilot to demonstrate competency in local and airport procedures, flight planning, and interactions with governing agencies to a level that meets the requirements of the country.

#### 4.2.5 Other personnel, training requirements

- 1) Flight follower (To be determined):
- 2) Ground handler (To be determined):
- 3) Observers / Navigators (To be determined):

End of Section 4

## 5 Maintenance Procedures

### 5.1 General

- 1) The maintenance of aircraft shall be performed and certified by a qualified and an **[MISSION NAME]** approved aircraft maintenance shop or mechanic as dictated by the country of aircraft registration.

### 5.2 Person Responsible for Maintenance

- 1) These procedures apply to the mechanics/engineers and avionics technicians that are responsible for the maintenance of **[MISSION NAME]** aircraft.
- 2) Maintenance crew requirements:
  - a) Current Aircraft Mechanical Engineer (AME, Canada), Airframe & Powerplant Certificate (A&P USA) or its equivalent, with the appropriate amount and type of experience to perform and sign out the maintenance or repairs required;
  - b) Current license appropriate to country and type of aircraft;
  - c) Records of:
    - i) Initial Training and Certification on the type of aircraft, engine, avionics, etc. operated by **[MISSION NAME]**; and
    - ii) Professional recurrent training completed every 2 years that shows competency in:
      - (1) The ability to meet industry standards; and
      - (2) Safely perform the work.

### 5.3 Maintenance Procedures

- 1) All maintenance procedures shall be performed IAW the aircraft technical library. This technical library must be accessible to **[MISSION NAME]** either by paper or a digital copy and will be kept up to date by **[MISSION NAME]**.
- 2) Airworthiness and Appearance
  - a) Each aircraft must be maintained in good airworthy condition. In addition, it should be kept clean both inside and out.
  - b) Float plane corrosion control is to be accomplished at the end of every day for all flights operating on or over saltwater;
    - i) Use a gentle spray of fresh water (not a pressure washer) to ensure the critical areas of the aircraft are adequately rinsed with the following time guidelines for each

section:

- (1) Each wing – 3 minutes;
- (2) Top of Fuselage – 3 minutes;
- (3) Tail section – 5 minutes;
- (4) Belly – 5 minutes;
- (5) Each float – 5 minutes; and
- (6) Nose/Cowling/Propeller – 5 minutes.

### 3) Airframe and Engine Inspections

- a) Maintenance schedules for airframes and engines shall meet regulatory requirements under the country of registry as well as those of manufacturers and official bulletins.
- b) In order to have an objective look at the maintenance of the aircraft it is recommended that every 3<sup>rd</sup> inspection of the aircraft be accomplished by a different mechanic/engineer.
- c) All maintenance involving rigging, flight controls, engine controls and the fuel system requires a second inspection by another AME. In the absence of a second AME, the pilot may accomplish and sign the inspection under the guidance of the AME that performed the work.

### 4) Aircraft Log Books

- a) A permanent record of inspections performed using inspection guides in the aircraft maintenance manual. Documentation of parts repaired or replaced shall be kept in the aircraft logbooks. Engine and accessories and the propeller shall be overhauled or replaced at overhaul time.

### 5) Equipment and tools

- a) All equipment and tools for the dedicated use of aircraft shall be kept clean, organized and well secured. Calibrated tools should be maintained according to the applicable regulations.

### 6) Engine Washdown

- a) Gasoline is strictly prohibited. Locally available products, such as solvent or kerosene may be used. This does not preclude the use of small quantities of gasoline in a pan to wash small parts if it is used outside the hangar and proper precautions are taken.

### 7) Aircraft Discrepancies

- a) Discrepancies should be written up on a designated form and corrected. The form shall include the type of repair and the name of the person making the repair. This is especially important for multiple-pilot programs.
- 8) Airworthiness Directives, Service Bulletins etc.
  - a) These shall be complied with as soon as practical and always within the limit specified in the document.
- 9) Towing the Aircraft
  - a) Towing the aircraft can be accomplished by:
    - ii) Moving by hand with or without tow bars; or
    - iii) Using a tug and a tow bar.
  - b) When maneuvering the aircraft on the ground 2 wing walkers are required that clear the wings and tail for hazards and obstacles.

#### 5.4 Maintenance Control System

- 1) The aircraft shall be maintained in accordance with the aircraft manufacturer's recommended maintenance program which includes, at minimum, an aircraft annual inspection.
- 2) Aircraft discrepancies or service difficulties shall be reported immediately to the Person Responsible for Maintenance specified in 5.1.0 above for appropriate action and resolution.
- 3) The person responsible for maintenance shall implement a system to ensure the aircraft is in compliance with all applicable airworthiness directives and other mandatory maintenance requirements and assure proper, compliant documentation accordingly.
- 4) All technical records, including aircraft logbooks and current status of applicable airworthiness directives, shall be stored in such a manner that allows each PIC to personally review content prior to flight. The TC compliant aircraft time sheet or aircraft log carried onboard the aircraft should also list appropriate inspection due dates and service intervals.
- 5) Before each flight, the PIC shall consult the aircraft time sheet or aircraft log and take note of the next scheduled maintenance requirement and the current list of any outstanding defects to decide whether the flight may take place. If in doubt as to the time remaining to maintenance tasks, or the acceptability of defects, the PIC must contact the **[MISSION NAME]** person responsible for maintenance.

#### 5.5 Flight Test Procedures

- 1) Test Pilots

- a) Test flights shall be conducted by one of the following personnel only, unless location prevents such compliance:
  - i) Chief Pilot;
  - ii) Senior Pilot; or
  - iii) Training Pilot/s
- 2) Requirements for Test Flights
  - a) Test flights will be conducted automatically for any one of the following reasons:
    - i) After an engine change; or
    - ii) After an annual or Certificate of Airworthiness Inspection.
- 3) Approved Test Flight Proforma
  - a) An approved test flight sheet, if available, shall be used on all occasions and the specified routine followed with the following exception:
    - i) A special test flight is conducted for a specific piece of equipment e.g. elevator change, radio check, etc. A test of that specific piece of equipment is then considered sufficient.
- 4) Passengers on Test Flights
  - a) Passengers other than authorized mechanics/engineers shall not be carried on any test flight that comes under any one of the following categories:
    - i) One or more engines replaced;
    - ii) Any control surface replaced or changed; or
    - iii) After partial or complete aircraft overhaul.

End of Section 5



## 6 Security Procedures

### 6.1 General

- 1) The pilot-in-command will be responsible for the aircraft security during all flight operations.

### 6.2 Preventative Measures

- 2) The focus of [MISSION NAME] preventative security measures will be to:
  - a) Prevent unauthorized access to company aircraft and facilities;
  - b) Prevent the unauthorized introduction of weapons or explosives onto company aircraft or into company facilities; and
  - c) Prevent the use of company aircraft to commit other unlawful acts, such as the transport of illicit drugs.
- 3) The following checklist shall be used for preventative security measures:
  - a) Doors/access panels: locked;
  - b) Emergency exits - secured;
  - c) Aircraft perimeter - marked/lighted;
  - d) Engine blanks – fitted;
  - e) Pre-flight - detailed check of aircraft cavities; and
  - f) Parking - hangared or security tape, if needed.

End of Section 6

## Appendix A: Risk Assessment Tool “The Mirror”

The focus is on the pilot-in-command (“YOU”)

<b>I. ARE YOU CURRENT?</b>		
A. In category (airplane) and class (single engine; multi engine)?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
B. In the make and model?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
C. Takeoffs and landings (day or night, as applicable to intended flight)?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
D. Have you had type-specific training in the last 12 months?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
Subtotal “No” Answers		
<b>II. ARE YOU UP TO IT TODAY?</b>		
A. Considering current personal circumstances, do you feel up to flying today?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
B. Will you be mentally focused on flying now and after any meetings?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
C. Have you properly compartmentalized non-flying concerns?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
D. Are you properly rested for today’s flight (reference Section 3.1.1)?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
E. Can this flight be readily postponed or rescheduled without undue pressure?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
Subtotal “No” Answers		
<b>III. WHAT DOES TODAY’S FLIGHT LOOK LIKE?</b>		
A. Will you be filing a VFR flight plan?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
B. Are you familiar with departure airport, area, terrain and procedures?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
C. Is the departure runway clean and dry (no standing water)?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
D. Have you completed weight and balance and takeoff-distance calculations?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
E. Is today’s departure weather VFR?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
F. Are enroute weather conditions expected to be VFR?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
G. Is the forecast free of heavy rain, thunderstorms or severe turbulence?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
H. Will the cabin altitude be below 9,000 ft for the entire flight?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
I. Are you familiar with the arrival airport, area, terrain and procedures?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
J. Is today’s arrival weather forecast to be VFR?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
M. Is the arrival runway clean and dry (no standing water)?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
N. Are surface winds less than 25 knots and/or crosswind less than 15 knots?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
Subtotal “No” Answers		
<b>IV. AIRCRAFT CONDITION</b>		
A. Has the aircraft flown since its last maintenance inspection or repair?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
B. Have you determined that the aircraft is currently airworthy (Appendix B)?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
C. Will you land with at least one (1) hour of fuel remaining in the tanks?	<input type="checkbox"/> _Yes	<input type="checkbox"/> _No
Subtotal “No” Answers		
Total of All “No” Answers		
0 – 3	<b>NORMAL</b>	Continue normal operations.
4 – 6	<b>CAUTION</b>	Proceed with caution. Consult flight operations manual for guidance and mitigations.
GREATER THAN 6	<b>NO-GO</b>	Critical decision to be made. Do not make the flight.

## Appendix B: Airworthiness Checklist

- Airworthiness certificate (original)
- Registration certificate (original)
- Aircraft flight manual or pilot operating handbook (current revision) including current weight and balance data
- Current status listing all applicable airworthiness directives, including time or date of recurring action
- Inspection due date (e.g., annual/100 hour/progressive event)
- ELT battery due date and 12-month operational inspection
- Compass deviation card
- Static system inspection certification
- Altimeter inspection certification
- Transponder inspection certification
- Current status of life-limited parts
- FAA form 337s for alterations or repairs
- Inoperative equipment certifications
- External data plate / serial number

**Note: Airworthy** means an aircraft and component parts meet its type design (or properly altered configuration) and is in a condition for safe operation. The above items must be verified and current in order to render a “Standard Airworthiness” determination by TC. Appendix B is designed as guidance only and is subject to change based upon current regulations. The decision to accept an aircraft in its present condition belongs to the PIC.

## **Appendix C: Weight and Balance Form**

## Appendix D: Emergency Response Plan

I. INITIAL NOTIFICATIONS	COMMENTS
Unless absolute knowledge to the contrary exists, assume all persons onboard have survived but are injured. Do not make statements to the media at this time.	
1. Confirm emergency personnel are responding or have responded and that on-scene protocols are being observed (see Part III below).	
2. Notify immediate family members (see Part II below).	
3. Notify the National Transportation Safety Board (NTSB) via the following email address [Email Address]	
4. Notify the insurance carrier.	
5. Notify the Person Responsible for Maintenance (Section 5.1.1).	
II. ACCOMMODATION OF FAMILY MEMBERS	
A company's first and highest responsibility is to the families of those involved in the accident. Every appropriate provision for their comfort and accommodation should be considered, assigned and acted upon first, prior to internal company or public comment. Take immediate steps to notify the family. If possible, inform them in person using company representatives, local police, Red Cross, etc.	
III. ON-SCENE RESPONSE	
1. Organize on-site assistance as necessary by providing or arranging for immediate first aid along with Fire/EMS/Police response.	
2. Note the time, place and description of the occurrence and the names with points of contact for any injured people and witnesses, including all passengers.	
3. Other than responding to emergency medical treatment inquiry, do not speak to anyone on the scene and do not assume any obligation or liability. Unless served a subpoena, you are under no legal obligation to make a statement to any government official. However, a pilot must cooperate in producing aircraft documents, pilot's license, medical certificate and blood alcohol tests.	
4. Take all reasonable precautions to protect the aircraft, aircraft components and contents from further damage. Do not move or otherwise disturb the scene without approval of the FAA. Do not abandon the aircraft or property and assure arrangements have been made to properly secure the accident scene.	
IV. EXTERNAL STATEMENT	
A brief statement confirming notification of the accident along with concern for all involved and full cooperation with appropriate authorities is initially sufficient.	

## Appendix E: Trip Debrief/Hazard/Incident Report Form

DATE OF FLIGHT:	DESTINATION:	PURPOSE:
General Comments About the Flight: (what went right; what went wrong; what can be improved; any new hazards uncovered; etc.)		Recommendations for Improvement: (procedural change, work on during next training event, specific ways to eliminate, correct or minimize a hazard, etc.)
Who to share this information with? <input type="checkbox"/> Maintenance <input type="checkbox"/> Aircraft Owner <input type="checkbox"/> FBO <input type="checkbox"/> ATC <input type="checkbox"/> Safety Pilot <input type="checkbox"/> CFI/Training Facility <input type="checkbox"/> Other Pilot(s) <input type="checkbox"/> Passengers <input type="checkbox"/> Colleagues/Associates <input type="checkbox"/> Office Personnel <input type="checkbox"/> Family <input type="checkbox"/> NASA ASRS <input type="checkbox"/> FAA <input type="checkbox"/> Other <input type="checkbox"/> None		Do any of the following need to be amended? <input type="checkbox"/> Flight Operations Manual <input type="checkbox"/> Risk Assessment Tool <input type="checkbox"/> Aircraft Checklist <input type="checkbox"/> Maintenance Procedures <input type="checkbox"/> Ground Handling Procedures <input type="checkbox"/> Training <input type="checkbox"/> Other <input type="checkbox"/> None  Corrective Action Taken:   Corrective Action Date: _____

**Note:** Something useful can be learned on every flight. It is therefore recommended the Trip Debrief sheet be completed by the pilot-in-command for each trip and filed per SMS guidance, Section 2.1.4.

**NTSB Aviation Occurrence Reporting Form can be found at the following link:**

[Insert Link]

## Appendix F: Refueling Operations

### General Rules of Refueling

#### 1) ALWAYS

- a) Have a serviceable BCF-type fire extinguisher positioned within 10 feet of the aircraft wing. Due to the nature of drum refueling operations, fuel is often spilt from drums and hoses, and vigilance should be maintained for fire hazards.
- b) Ensure the aircraft and refueling equipment are properly bonded before opening tanks,
- c) Fuel only in the open air,
- d) Use a stable platform to stand on when refueling, and
- e) Cease fueling operations if any hazard becomes apparent.

#### 2) NEVER

- a) Leave a nozzle unattended during fueling operations,
- b) Leave fuel caps or covers off when climbing down for any reason,
- c) Allow the nozzle trigger to be blocked or tied open,
- d) Wear clothes that are wet with fuel,
- e) Carry loose articles that can drop into the fuel tank, or
- f) Become complacent when handling aviation fuel.

### Fuel Grade

- 1) The use of fuel other than that specified by the engine manufacturer or a subsequent STC is strictly prohibited.

### Persons on Board During Refueling

- 1) No person shall be allowed to remain inside the aircraft during refueling. At the discretion of the pilot in command, a sick or injured person may remain in the aircraft provided another person is designated (and able and readily available) to help with evacuation in the event of a fire.

### Grounding

- 1) The aircraft and dispensing units must be properly bonded when fueling.

### Maintenance activities

- 1) All maintenance activities on the aircraft shall be stopped prior to refueling.



## Approved Refuelers

- 1) Trained and approved persons may refuel the aircraft at the request of the pilot in command. The pilot in command remains responsible for the fuel loading including:
  - a) The amount of fuel onboard the aircraft at takeoff; and
  - b) The fuel grade and quality (checking for contaminants).

## Fueling Devices

- 1) Fuel Filters:
  - a) All fuel uplifted must pass through an approved filtering device. Approved devices are:
  - b) A clean, dust and hole free filter paper. FRAM #111255 or WIX CARTRIDGE-type filter #FF3389 or equivalent,
  - c) Standard aviation-type commercial filters that are within valid inspection time and have a local history of successful filtering,
  - d) A funnel and filter should always be carried in the aircraft. Mr. Funnel cartridge funnel is acceptable. Funnel should be kept clean and dry. Never assume that filtered fuel will always be available, even at commercially operated fuelers.
- 2) Funnels:
  - a) Plastic buckets and funnels are dangerous for use in refueling because static builds up and cannot be grounded. They are not to be used unless they are specified as conductive (such as black Mr. Funnel).
  - b) Metal funnels should be in contact with metal surfaces on the aircraft. The metal nozzle should touch the funnel thereby creating a bond to the aircraft.
- 3) Fuel Dip Sticks
  - a) Dip sticks can be a most reliable method for determining fuel onboard, but they are only as accurate as their calibration.
  - b) The aircraft must be on level ground to get an accurate reading.
  - c) If the aircraft is on water, an error in reading can occur with the weight of the pilot moving from one side to another.

## Fuel Vapors

- 1) Aircraft should not be fueled or defueled inside hangars. Even outside (in the open air) the concentration of fuel vapor in the area surrounding the aircraft varies with the wind velocity and the rate of fueling. These vapors are heavier than air and they tend to settle and spread. When fuel is pumped into the aircraft tanks it displaces an equal volume of vapor that is discharged into the atmosphere. Vapor concentrations are dangerously increased by fuel spills.

## Fueling During Rain

- 1) Extreme caution should be used in fueling during rain or when electrical storms are within 15 nm. Fueling operations shall be suspended when lightning is within 10 nm or during periods of moderate to heavy rain.

## Fueling from Drums

- 1) It is the responsibility of the pilot-in-command to ensure that only uncontaminated fuel of the correct octane rating is dispensed into the aircraft fuel system.
- 2) When refueling from drum fuel stocks, ensure that the equipment is serviceable, and properly statically bonded between drum, aircraft, pumping equipment and an earthing point. Always conduct a drum fuel pump filter drain before and after refueling to ensure fuel quality.
- 3) Remember that many rural peoples in the isolated, underdeveloped areas understand little or nothing of fire hazards, and the attendant dangers of aviation spirit and vapor emissions.
- 4) If fuel is spilt during refueling, if possible, manhandle the aircraft away from the spillage before starting engines, to avoid possible fires.
- 5) Drums should be stored upright and tilted so that any water accumulations will not cover either of the bungs. Drums should be thoroughly drained before re-filling to ensure no accumulation of water or contaminants; drained fuel may be collected in a clean white bucket and clean fuel poured off into another drum or container that will be filtered prior to entering the aircraft.

**Note:** Drum life of Avgas is twelve (12) months from the batch test date.

## **INREACH SATELLITE COMMUNICATIONS OUTLINE**

### **[MISSION NAME] [Country Name]**

Amended October 27, 2020

This document is an addendum to the Operations Manual and must be carried in the aircraft and accessible to the pilot at all times.

Project personnel are to be familiar with this document and its location for reference as required.

#### **Basic Operation and Maintenance**

Inreach is to be fully charged once per week or after 10 operational hours. Or be continuously powered and charged from the aircraft battery while in flight.

If not powered from the aircraft then a 1000ma backup battery is to be carried in the aircraft at all times and recharged after any use or a minimum of once per month.

Software updates and syncing must be checked and completed as required the first week of every month.

Text message send and receive is to be tested the first week of every month.

#### **Operational Use**

Flight tracking is to be activated for ALL flights

Flight tracking is to be activated prior to takeoff and turned off only after landing

#### **Emergency Response and Registration**

In the case of an emergency activation ATC is to be notified immediately. Garmin Inreach emergency call center stored contacts are to include;

- a) Chief Pilot, [MISSION NAME] [Country Name]
- b) Dispatcher, [MISSION NAME] [Country Name]
- c) Managing Director, [MISSION NAME]
- d) Director of Safety, [MISSION NAME]