



**Pipestone County
Sheriff's Office
Unmanned Aircraft Systems (UAS)
Policy and Procedures Manual
Sheriff Keith Vreeman**

**UNMANNED AIRCRAFT SYSTEMS UNIT
POLICY AND PROCEDURES MANUAL
TABLE OF CONTENTS**

PREFACE.....4

MISSION STATEMENT.....5

01.00.00 ADMINISTRATIVE MATTERS.....6

01.01.01 Authority

01.01.02 Scope of Manual

01.01.03 Relevancy Requirement

01.01.04 Distribution of Manual

01.02.00 Organization

01.02.01 Unit Composition

01.02.02 Command Responsibility

01.02.03 Assignment of Unit Personnel

01.03.00 Personnel

01.03.01 Commanding Officer

01.03.02 Supervisor/Chief Pilot

01.03.03 Pilots

01.03.04 Pilot Levels

01.03.05 Sensor System Operators/Visual Observers (SSO/VO)

02.00.00 SAFETY..... 8

02.01.00 Safety Policy

02.02.00 Operational Hazard and Occurrence Reports

02.03.00 Supervisor/Chief Pilot Responsibilities

02.04.00 Safety Officer

02.05.00 Safety Training

02.06.00 Safety Stand Down

02.07.00 Medical Factors

03.00.00 TRAINING.....10

03.01.00 Objective

03.02.00 Budget

03.03.00 Instructor Pilots

03.04.00 Training Plans

03.05.00 Initial Training

03.06.00 Recurrent Training

03.07.00 Use of GFSO UAS for Training GFSO UAS UNIT MANUAL V8 (4 December 2016) 3

04.00.00 GENERAL OPERATING PROCEDURES.....11

04.01.00 Requests for Air Support

04.02.00 Mission Priorities

04.03.00 Flights Outside Grand Forks County

- 04.04.00 Minimum Crew Requirements
- 04.05.00 Flight Crew Responsibilities
 - 04.05.01 Pilot
 - 04.05.02 Tactical Flight Officer
 - 04.05.03 Crew Coordination
- 04.06.00 Flight Time Limitations and Crew Rest Requirements
- 04.07.00 Personal Protective Equipment
- 04.08.00 Preflight Action
 - 04.08.01 General
 - 04.08.02 Physical Assessment
 - 04.08.03 Inspections
 - 04.08.04 Weather Briefings
 - 04.08.05 Documentation
 - 04.08.06 Preflight Planning
- 04.09.00 Ground Handling
- 04.10.00 Post Flight
 - 04.10.01 Data Collection Minimization
 - 04.10.02 Data Storage
 - 04-10-03 Search Warrants
- 04.11.00 Activity Reporting
- 04.12.00 Constitutional Aspects of Aerial Searches
- 04.13.00 Emergency Action Plan
- 04.14.00 Additional Operational Considerations
- 04.15.00 Arming UAS
- 05.00.00 GROUND SAFETY.....17**
- 06.00.00 MAINTENANCE.....17**
- 06.01.00 General
- 06.02.00 Definitions
- 06.03.00 Responsibilities
 - 06.03.01 Maintenance Officer
 - 06.03.02 Pilots
- 06.04.00 Discrepancy Reporting System

PREFACE

The following procedures are intended to promote the safe and efficient operation of the department's unmanned aircraft. **SAFETY, above all else, is the primary concern in each and every operation, regardless of the nature of the mission.**

MISSION STATEMENT

The Pipestone County Sheriff's Office Unmanned Aircraft Systems (UAS) Unit shall support other elements of the Pipestone County Sheriff's Office and other emergency services agencies, by providing a safe and efficient aerial observation perspective on law enforcement and other public safety incidents. Missions will be accomplished efficiently and safely while respecting the law and the privacy of the citizens we serve.

01.00.0 ADMINISTRATIVE MATTERS

01.01.01 The policies and procedures contained in this manual are issued by authority of the Sheriff as such it is an official document of the agency.

01.01.02 This manual is not intended to be all-inclusive, but as a supplement to other department guidelines, Federal Aviation Regulations, aircraft manufacturers' approved flight manuals, etc...

01.01.03 This manual has been written to address unmanned aircraft operations as they existed when the manual was drafted. Equipment, personnel, environment (internal and external), etc., change over time. The management of change (MOC) involves a systematic approach to monitoring organizational change and is a critical part of the risk management process. Given this fact, it is essential that this manual be periodically updated as necessary. The entire manual will be reviewed annually to assure it is up to date. Any changes to the manual will be communicated expeditiously to all affected personnel.

01.01.04 A copy of this manual (electronic or paper) will be issued to every member having unmanned aircraft responsibilities. In addition, a copy of the manual will be present during all UAS operations.

01.02.00 ORGANIZATION

01.02.01 The Unmanned Aircraft Operations Unit shall be comprised of those personnel assigned by the Sheriff and may include pilots, visual observers, and others as deemed necessary.

01.02.02 Unmanned aircraft operations are under the command of the Sheriff. Control and supervision of flight operations are hereby delegated to the UAS Chief Pilot. The UAS Chief Pilot may delegate such responsibility to other UAS pilots and staff. Control and supervision of the law enforcement aspect of all UAS missions is retained by the Sheriff. The Sheriff may delegate such responsibility to other law enforcement personnel.

01.02.03 Personnel assignments may be on a full-time, part-time, or volunteer basis as deemed by the sheriff.

01.03.00 PERSONNEL

01.03.01 Commanding Officer - The Sheriff serves as the commanding officer of unmanned aircraft operations and is responsible for overall management and supervision of the operation, which includes budget preparation and control, personnel selection, etc...

1. Given the technical nature of aviation, the Sheriff may, at his discretion, assign responsibility for unmanned aircraft operations to any member who has the knowledge, skills and abilities to safely and effectively manage the operation.

01.03.02 Supervisor/Chief Pilot

1. The Sheriff shall assign a subordinate to serve as the supervisor of UAS operations.
2. At the discretion of the Sheriff one pilot may be designated as the chief pilot who shall be subordinate to the supervisor of the UAS Unit.

01.03.03 Pilots

1. To be considered for selection as a pilot, applicants must be in good standing with their agency and meet any other requirements imposed by the Sheriff.
2. A pilot's primary duty is the safe and effective operation of the agency's UAS in accordance with the manufacturers' approved flight manual, FAA regulations and certificate of authorization conditions, and PCSO policies and procedures. Pilots must remain knowledgeable of pertinent FAA regulations; aircraft manufacturer's flight manual; and PCSO policies and procedures.
3. Pilots must maintain a valid driver license.
4. Pilots must maintain a valid FAA Remote Pilot Certificate.
5. In order to fly a mission (other than flights required for initial training or currency) pilots must have completed three (3) currency events within the previous 90 days. Currency events include landings, takeoffs, and simulator flights.
6. Pilots may be temporarily or permanently removed from flight status at any time by the Sheriff for reasons including performance, proficiency, etc... Should this become necessary, the pilot shall be notified in writing.

01.03.04 Pilot Levels

- 1. Pilot:** Must possess a FAA remote Pilot Certificate
- 2. Senior Pilot:** Pilot qualified (see 1 above) plus 5 UAS missions as PIC
- 3. Command Pilot:** Pilot qualified (See 1 above) plus 10 UAS missions as PIC and 2 years tenure in UAS Unit.

01.03.05 Sensor System Operators/Visual Observers (SSO/VO)

1. The sensor system operator/visual observer is responsible for assisting the pilot in scanning the airspace surrounding UAS operations and interpreting downlink data received from the UAS.
2. The sensor system operator/visual observer must maintain a valid drivers license.

02.00.00 SAFETY

02.01.00 The Sheriff is committed to a safe and healthy workplace, including:

1. The ongoing pursuit of an accident free workplace, including no harm to people, no damage to equipment, the environment and property.
2. 2. A culture of open reporting of all safety hazards in which management will not initiate disciplinary action against any personnel who, in good faith, disclose a hazard or safety occurrence due to unintentional or intentional conduct.
3. 3. Support for safety training and awareness programs.
4. 4. Conducting regular audits of safety policies, procedures and practices.
5. 5. Monitoring the unmanned aviation community to ensure best safety practices are incorporated into the organization.

02.01.01 It is the duty of every agency member to contribute to the goal of continued safe operations. This contribution may come in many forms and includes always operating in the safest manner practicable and ***never taking unnecessary risks***. Any safety hazard, whether procedural, operational, or maintenance related should be identified and corrected as soon as possible. Any suggestions in the interest of safety should be made to the Sheriff or Chief Pilot without reservation.

02.02.00 If any member observes, or has knowledge of, an unsafe or dangerous act committed by another member, the Sheriff or Chief Pilot is to be notified immediately so that corrective action may be taken.

02.03.00 CHIEF PILOT

02.03.01 The chief pilot is responsible for the following:

1. Ensuring all flight operations personnel understand applicable regulatory requirements, standards and organizational safety policies and procedures.
2. Observe and control safety systems by monitoring and supervision of pilots and sensor system operators.
3. Measure Pilot and sensor system operator performance and compliance with organizational goals, objectives and regulatory requirements.
4. Review standards and the practices of agency personnel as they impact flight safety.

02.04.00 SAFETY OFFICER

02.04.01 UAS Unit members may serve as the safety officer.

02.04.02 The chief pilot will insure that the safety officers receives the necessary training to properly perform the duties of this role.

02.04.03 Duties of the safety officer may include:

1. Copy and circulate pertinent safety information.
2. Assist the chief pilot in debriefing training sessions with an emphasis on safety concerns/issues.
3. It is emphasized again that safety is the responsibility of ALL members, not just the safety officer.

02.05.00 SAFETY TRAINING

02.05.01 All new members shall receive training in the following prior to serving in an operational capacity:

1. Agency commitment to safety.
2. Agency policy/SOP.
3. The member's role in safety.
4. Process for reporting hazards and occurrences.
5. Applicable emergency procedures.

02.05.02 All safety training shall be documented.

02.06.00 SAFETY STAND DOWN

02.06.01 A safety discussion will be conducted annually.

02.06.02 During the safety meeting, normal operations are suspended to assure that all members are focused on the safety of the program.

02.07.00 MEDICAL

1. Each member shall report to work rested and emotionally prepared for the tasks at hand.
2. Physical illness, exhaustion, emotional problems, etc... can seriously impair judgment, memory and alertness. The safest rule is not to act as a flight crew member when suffering from any of the above. Unit members are expected to ground themselves when these problems could reasonably be expected to affect their ability to perform flight duties.
3. A self-assessment of physical condition shall be made by all flight crew members during preflight activities.

4. No member shall act as an air crew member within eight hours after consumption of any alcoholic beverage, while under the influence of alcohol, or while having an alcohol concentration of 0.04 or greater in a blood or breath specimen (FAR 91.17).

03.00.00 TRAINING

03.01.01 OBJECTIVE

1. The key to continued safe operations is maintaining a professional level of aviation competency. The first step in this process is establishing minimum qualifications for selecting aircrew. The second step involves training.

03.02.00 BUDGET

1. The Sheriff, or his/her designee, will meet with the UAS Unit Chief Pilot annually to ascertain training needs for the upcoming fiscal year. When applicable and subject to funding, appropriate budget documents will be prepared and submitted requesting the necessary funds to support training.

2. Every effort will be made, using resources that are available, to provide meaningful training to new and existing members.

03.03.00 INSTRUCTOR PILOTS

1. All UAS Unit Senior and Command Pilots are hereby designated as instructors for both ground and flight operations.

03.04.00 TRAINING PLANS

1. The chief pilot will formulate a training plan for each unit training session.

2. Training objectives will vary depending on whether the member is new to unmanned aviation or an experienced member. For new members, the focus will be familiarization with the equipment and operational procedures. Existing members will focus on recurrent training. Objectives should challenge the member to increase their competency in the knowledge and skills necessary to perform safe UAS operations.

03.05.00 INITIAL TRAINING

1. Initial factory authorized training will be conducted to provide new pilots with skills sufficient to operate specific unmanned aircraft systems.

2. Any new member who fails to successfully complete initial training may be subject to removal from the unit.

03.06.00 RECURRENT TRAINING

1. Recurrent training for all pilots and system operators/visual observers will be conducted no less than twice each calendar year. The UAS Unit Chief Pilot is responsible for organizing these training sessions. Training will emphasize safety, respect for the law and citizens' privacy, crew resource management, "lessons learned" in previous deployments, and the efficient completion of public safety missions.

2. All pilots must complete at least three (3) currency events each 90 days utilizing the make and model of UAS to be deployed. Currency events include landings, takeoffs, and simulator events. Pilots who experience a lapse in currency must perform their currency events under the supervision

of the UAS chief pilot. Lapsed currency flights may not be in support of an actual public safety mission. Flights necessary to demonstrate pilot currency will be recorded in the pilot's UAS logbook.

3. Recurrent training is not limited to actual pilot skills but includes knowledge of all pertinent unmanned aircraft system matters.

4. Failure to demonstrate proficiency may result in removal from the Unmanned Aircraft Systems Unit.

03.07.00 USE OF PCSO UNMANNED AIRCRAFT SYSTEMS FOR TRAINING

1. PCSO unmanned aircraft systems may be used to meet training objectives.

04.00.00 GENERAL OPERATING PROCEDURES

04.01.00 CALL OUT PROCEDURES

1. PCSO, and other agencies' personnel, requesting UAS Unit support for planned events should submit the request to the Sheriff at least 5 working days in advance of the event.

2. Requests for immediate support of unplanned events shall be made to the Public Safety Answering Point (PSAP) via telephone, radio, or in-person. The decision to respond UAS personnel will be made by the on-duty PCSO Supervisor after consultation with the UAS Unit Chief Pilot or his designee.

3. Once a request for UAS response has been approved by the on-duty PCSO Supervisor, PSAP personnel will notify UAS Unit Personnel via the radio or telephone.

4. Upon being directed to respond to an incident, the UAS pilot will pick-up the UAS Unit vehicle and respond to the identified staging area.

5. Whenever possible, only the pilot-in-command and the VO will occupy the flight operations area. All other personnel will observe from a distance that discourages conversational communication with the PIC and VO. Such an arrangement is MANDATORY during operations. Staff other than the PIC and VO may view downlinked imagery via a remote viewing terminal (RVT) located away from the flight operations area.

04.02.00 MISSION PRIORITIES

1. Several requests for air support may be received simultaneously. Given the limited number of unmanned aircraft and personnel available, it is necessary to prioritize calls for service.

2. In general terms, calls are prioritized as follows (listed in order of importance):

- In-progress calls involving a threat to the safety of any person
- ☒ Search and rescue of innocent victims
- ☒ Searches for fleeing criminal suspects
- ☒ Surveillance of criminal suspects
- ☒ Traffic control operations
- ☒ Requests to support other government agencies
- ☒ Photo flights

04.03.00 FLIGHTS OUTSIDE OF PIPESTONE COUNTY

1. Planned flights leaving Pipestone County require the specific approval of the Sheriff or his designee.

04.04.00 MINIMUM FLIGHT CREW REQUIREMENTS

1. Due to the nature of the law enforcement mission and the clear distinction between air crew responsibilities, the minimum crew on ALL law enforcement missions will be a pilot and a visual observer. **Under no circumstances will a pilot attempt to complete a law enforcement mission without the assistance of a VO.**

04.05.00 FLIGHT CREW RESPONSIBILITIES

04.05.01 PILOT-IN-COMMAND

1. The pilot-in-command (PIC) is directly responsible for and is the final authority over the operation of the unmanned aircraft.
2. PICs have absolute authority to reject a flight based on weather, aircraft limitations, physical condition, etc. No member of any law enforcement agency, regardless of rank, can order a PIC to make a flight when, in the opinion of the PIC it cannot be done safely.
3. PICs are responsible for compliance with this manual, Federal Aviation Regulations, Letters of Agreement, and Certificates of Authorization conditions.
4. PICs shall handle radio communications with air traffic control and other aircraft.

04.05.02 VISUAL OBSERVER (VO)

1. The VO is responsible for the law enforcement aspect of the mission.
2. The VO will assist the pilot in maintaining visual awareness of the airspace and advise the pilot of any imminent hazards including other aircraft, terrain, and adverse weather conditions.
3. The VO shall operate the payload and handle radio communications between ground units and dispatcher.
4. The VO shall remain alert for suspicious persons or activities on the ground and coordinate response by ground units.
5. The VO will avoid unnecessary communications with the pilot during takeoff and landing.
6. The VO is the custodian of evidence. In this capacity, the VO is responsible for the safeguarding and proper processing of any evidence including, but not limited to, digital imagery to include still and video images.

04.05.03 CREW COORDINATION

1. The PIC and VO will work together to form the crew which will ultimately accomplish mission objectives.
2. In the interest of safety, both the PIC and VO must be comfortable with any decision made while working as a crew. This begins when deciding whether to accept a mission and continues throughout the mission. If there is genuine concern on the part of either the PIC, or VO, the mission should not be accepted or should be terminated.
3. Concern on the part of either crew member should be immediately expressed to the other member. Effective communication is the key. Many times, reservations about something can be put to rest with a simple explanation.

4. PICs and VOs have the right, as well as the responsibility, to question the other crew member whenever there is ambiguity, or they are uncomfortable with certain procedures, weather, etc.
5. THE CREW CONCEPT AND OPEN COMMUNICATION WILL HELP ACHIEVE SAFE OPERATIONS.

04.06.00 FLIGHT TIME LIMITATIONS AND REST REQUIREMENTS

04.06.01 During any duty period the total flight time of any PIC may not exceed 8 hours, which shall include all unmanned or manned aircraft flying by that pilot. Maximum duty periods and required crew rest periods are:

1. Duty period less than 10 hours: 8 hours crew rest.
2. Duty period greater than 10 but less than 12 hours: 10 hrs. crew rest.
3. Duty period greater than 12 hours: 12 hrs. crew rest.
4. In NO case may a duty day exceed 16 hours.

04.07.00 PERSONAL PROTECTIVE EQUIPMENT

04.07.01 Other

1. Service weapons may to be worn/carried by UAS pilots and VOs authorized to carry such weapons.
2. Personnel within close proximity to rotor wing UAS launches and recoveries may wear protective eyewear at their discretion or if directed to do so by a supervisor.

04.08.00 PREFLIGHT ACTIONS

04.08.01 Thorough preflight planning and inspections are critical to safe operations.

04.08.02 Physical Assessment

1. Preflight begins with the aircrew making a self-assessment of their physical condition.
2. If unable to perform flight duties, the crewmember will decline such activity.

04.08.03 INSPECTIONS

1. At the beginning of each tour of duty, the pilot shall conduct a thorough preflight inspection of the UAS in accordance with the instructions contained in the unmanned aircraft flight checklist.
2. All mission equipment will be tested prior to the flight by the VO or pilot.
3. It is widely recognized that the use of checklists is a major factor in reducing aviation accidents. Checklists are provided and shall be utilized.
4. If during the course of the preflight any mechanical discrepancy is found, refer to 06.00.00 MAINTENANCE.

04.08.04 WEATHER

1. Prior to initiating a flight, the pilot shall obtain a full weather briefing. The pilot will ensure that he/she gathers enough information to make themselves familiar with the weather situation existing throughout the area of operation.
2. Subsequent to the original weather briefing, pilots will obtain, as necessary, sufficient weather information to ensure that the flight(s) may continue safely. The frequency of these additional weather checks will be determined by the speed at which weather conditions are changing. Rapidly changing conditions require more frequent weather updates.
3. Weather minimums for UAS Operations are contained within section 14.04.04 of this manual.

04.08.05 DISPATCH and DOCUMENTATION

1. All flights will be dispatched per Pipestone County Sheriff's Office dispatch procedures. Prior to beginning flight activity, at least two Unit Members must concur that the flight can be conducted safely. Whenever possible, one of the members should be at a location other than the flight operations location. All flights will be noted in the aircraft logbook and documented in the PCSO UAS Flight Log.

04.08.06 PRE-FLIGHT PLANNING

1. The pilot shall familiarize themselves with all available information concerning the flight.
2. Pilots shall insure that all required FAA notifications have been made prior to conducting any flight.

04.09.00 GROUND HANDLING

1. The pilot is responsible for operation of UAS in the air and on the ground. Pilots will ensure that no unauthorized items are attached to the aircraft prior to movement. During movement, adequate clearance will be maintained.
2. Upon "Repack" of the unmanned aircraft the Pilot will ensure that all items are returned to their proper place IAW the system inventory checklist stored in the system case.

04.10.00 POST FLIGHT RESPONSIBILITIES

1. A thorough inspection will be conducted of the UAS immediately after the completion of the mission to ascertain if any damage was sustained during operation.
2. If necessary, the aircraft will be serviced so that it is immediately available for the next flight.
3. Necessary entries will be made into the aircraft flight log and appropriate reports will be completed.
4. Batteries will be placed on charge to insure their operability for future flights.

04.10.01 DATA COLLECTION MINIMIZATION

In order to safeguard the privacy of the citizens we serve, collection of data to include, but not limited to, digital photographs, digital video, infrared images, and sound recordings will be limited to the extent absolutely necessary to accomplish the current mission.

04.10.02 DATA STORAGE

Only data that meets legitimate research or training objectives, or has evidentiary value, will be retained after the mission has been concluded. Said data will be safeguarded so as to protect the privacy of citizens who may be depicted in the data. All other data will be destroyed through electronic deletion within 10 days of conclusion of the flight. Digital logs of aircraft mission profiles are exempt from this requirement. The VO is responsible for safeguarding and deleting data as required.

04.10.03 SEARCH WARRANTS

1. Pursuant to Minnesota law, surveillance flights that do not meet an exception to the search warrant requirement (plain view, open fields, incident to arrest, hot pursuit, and consent) will only be conducted in compliance with a duly issued search warrant. The search warrant affidavit must include the following as a "data collection statement":
i. The persons that will have the power to authorize the use of the unmanned aerial vehicle;

- ii. The locations in which the unmanned aerial vehicle will operate;
- iii. The maximum period for which the unmanned aerial vehicle will operate in each flight; and
- iv. Whether the unmanned aerial vehicle will collect information or data about individuals or groups of individuals, and if so:
 - a. The circumstances under which the unmanned aerial system will be used; and
 - b. The specific kinds of information or data the unmanned aerial system will collect about individuals and how that information or data will be used, disclosed, and otherwise handled, including:
 - i. The period for which the information or data will be retained; and
 - ii. Whether the information or data will be destroyed, and if so, when and how the information or data will be destroyed.

04.11.00 ACTIVITY REPORTING PROCEDURES

1. Flight activities will be documented in the aircraft logbook and within the PCSO Flight Log.

04.12.00 CONSTITUTIONAL ASPECTS OF AERIAL SEARCHES

1. Aerial searches to inspect, or gather evidence on activity on the ground may, under some circumstances, intrude upon a person's reasonable expectation of privacy and therefore come under the protection of the Fourth Amendment to the U.S. Constitution.
2. The Supreme Court has cautioned against assuming that compliance with FAA regulations will automatically satisfy Fourth Amendment requirements. Instead, the courts will determine whether the law enforcement aircraft is in the public airways at an altitude at which members of the public regularly travel. Other considerations include; the type of property (open fields versus curtilage); frequency of other aircraft flights over the area; steps taken to conceal property and activity from aerial observation and location of the observer (altitude).
3. As a result of pertinent U.S. Supreme Court decisions, aerial searches of areas that can be reasonably interpreted to give rise to a reasonable expectation of privacy will be conducted no lower than 400' AGL absent possession of a search or arrest warrant specifying use of the UAS. This section is not intended to prohibit aerial searches of areas that do not give rise to a reasonable expectation of privacy or searches pursuant to a search warrant to be conducted at altitudes below 400' AGL. Additionally, in rare instances, extreme exigent circumstances would also justify searches of "reasonable expectation of privacy" areas at an altitude below 400' AGL.
4. Use of thermal imagers is passive and non-intrusive. In most circumstances, use of this device is not considered a search and does not require a search warrant. However, a 2001 U.S. Supreme Court decision (U.S. v. Kyllo), held that using sense-enhancing technology to obtain any information regarding the interior of a home that could not otherwise have been obtained without physical intrusion into a Constitutionally protected area, constitutes a search. Thus, police may not use thermal imagers to scan a private residence for heat characteristics (a tactic used to identify indoor marijuana grow operations) without first obtaining a search warrant. It does not prohibit their use on non-residential structures, or other areas that would not give rise to a "reasonable expectation of privacy".

5. It is ESSENTIAL to note that case law in the area of UAS searches has not yet matured to the point that clear guidelines have evolved. In all cases of UAS deployment, reasonableness and respect for the privacy of individuals shall guide the actions of the UAS VO and pilot.

04.13.00 EMERGENCY RESPONSE PLAN

04.13.01 During UAS operations, emergency situations may develop at any time. The primary concern in such incidents is the prevention of injury to persons on the ground and/or other users of the National Airspace System. Secondary concerns include protection of property, flora, and fauna on the ground.

04.13.02 Following a UAS accident involving personal injury and/or significant property damage, the aircrew (if able) shall do the following:

1. Immediately notify dispatch and request assistance. Provide as much information as possible about the extent of the injuries, or damage.
2. Render first aid to the injured.
3. Request notification of the supervisor/chief pilot and Sheriff, who will respond to the scene and coordinate accident investigation efforts.
4. Request the FAA and NTSB be notified.
5. Survey the damage to the aircraft and/or other property.
6. Prior to the arrival of the FAA and NTSB, ensure the aircraft and its contents are moved only to the extent necessary to remove persons injured, protect the public from injury and/or protect the wreckage from further damage.
7. Provide any additional assistance or information requested by the FAA and NTSB.
8. Submit a detailed, written report to the Sheriff

04.13.03 For ground emergencies, personnel shall:

1. Evaluate the need for response by fire or EMS.
2. Provide first aid, contain the incident, etc.
3. Notify the supervisor/chief pilot and Sheriff.

04.13.04 Pre-Planning for Emergencies

1. Prior to any UAS operations, the pilot and/or VO will identify the nearest emergency medical facility and brief all involved personnel on an emergency transportation plan.

04.14.00 ADDITIONAL OPERATIONAL GUIDELINES

04.14.01 Personal use of the PCSO UAS is prohibited.

04.14.02 GENERAL – Unmanned Aircraft will be operated in accordance with this manual, UAS Manufacturer's manual and recommendations, letters of agreement, and Federal Aviation Regulations.

04.14.03 FLIGHT LIMITATIONS

04.14.04 Weather

1. Flight into instrument meteorological conditions, thunderstorms, or other severe weather is prohibited.
2. No operations will be conducted when the flight visibility is less than 3 statute miles (measured from the UAS control station).

3. All flights must be conducted at least 500' beneath any cloud ceiling.
4. Weather minimums are not applicable to indoor operations.

04.14.05 MAXIMUM AND MINIMUM ALTITUDES

1. The maximum altitude for operations is specified in the airframe/mission specific COA. For Part 107 operations, 400' AGL is the maximum altitude.
2. The minimum altitude is one at which operations can be conducted without undue risk to persons or property on the surface.

04.14.06 MISCELLANEOUS

1. Should the PIC or VO develop fatigue or a sudden illness, the flight shall be terminated as soon as practical.

04.15.00 ARMING OF UAS

04.15.01- Deployment of any type of projectile, chemical agent, or electrical current weapon from a GFSD UAS is **PROHIBITED**.

05.00.00 GROUND SAFETY

1. The pilot and VO must be constantly aware of dangers to ground personnel from rotating propeller or rotor blades.
2. The pilot will not under any circumstances leave any unauthorized person in charge of the unmanned aircraft controls while the motor is running. If it is necessary for the pilot to leave the unmanned aircraft, the motor will be shut down and the controls deactivated.
3. Only mission essential personnel will be in proximity to UAS launch and recovery activities.
4. When operating over populated areas, the pilot will insure that a "defined incident perimeter" exists, or all persons are inside structures or vehicles which will limit the potential of persons being present beneath the UAS flight path.

06.00.00 MAINTENANCE

06.01.00 GENERAL

1. Properly maintained UAS are essential to safe operations. Compliance with manufacturer's scheduled maintenance, preflight inspections and immediate repair of mechanical problems ensure the availability and safety of unmanned aircraft.

06.02.00 DEFINITIONS

1. **Aircraft Flight Log** – Flight record book kept in the UAS storage case
2. **Preventive Maintenance** – Simple, or minor adjustments or the replacement of small standard parts not involving complex assembly operations.
3. **Scheduled Maintenance** – Periodic maintenance on aircraft at known intervals.
4. **Unscheduled Maintenance** – Repairs to aircraft in response to mechanical deficiencies.

06.03.00 RESPONSIBILITIES

06.03.01 Maintenance Officer

1. One UAS Unit member may be designated as the maintenance officer. The maintenance officer shall coordinate maintenance for agency unmanned aircraft. This assignment will be in addition to other duties.
2. If possible, maintenance will be scheduled when it will have the least impact on operations.
3. The maintenance officer shall maintain the aircraft maintenance records.
4. The maintenance officer supervisor/chief pilot and Sheriff shall prepare the annual budget request for maintenance related needs. To do so, it will be necessary to accurately project which life-limited parts, or calendar-life components will need to be replaced, which systems require certification, required inspections, etc...

06.03.02 Pilot-in-command

1. Conduct a thorough preflight inspection of the aircraft in accordance with the aircraft checklist. The Discrepancy Reporting System shall be followed if problems are noted.
2. The Aircraft Flight Log shall be reviewed prior to flight and the appropriate data entered at the conclusion of each flight.
3. Pilots are generally not authorized to order repair work, parts, etc., from the commercial maintenance provider without prior approval. When exigent circumstances exist, pilots are authorized to order those repairs necessary to assure the aircraft is operational and safe. Such repairs shall be reported to the supervisor/chief pilot as soon as practical.
4. In accordance with the Federal Aviation Regulations (refer to FAR Part 43.3), pilots can perform preventive maintenance. All such work must be entered into the maintenance records.
5. The pilot is the final authority on whether an aircraft is airworthy.

06.04.00 DISCREPANCY REPORTING SYSTEM

1. For minor problems not requiring grounding, note the problem in the Aircraft Flight Log, complete a discrepancy form and notify the maintenance officer.
2. For major problems requiring grounding, note the problem in the Aircraft Flight Log, complete a discrepancy form, notify the maintenance officer and affix a placard to the system case indicating that the aircraft is not airworthy.
3. Software, hardware and firmware updates will be documented via discrepancy reporting system.

<https://www.revisor.mn.gov/laws/2020/0/Session+Law/Chapter/82/>