Santa Rosa Police Department

Unmanned Aerial System

Operations Manual

February 9, 2018

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I. Preface:

The following procedures are intended to promote the safe, efficient and lawful operation of the Santa Rosa Police Department (SRPD) small Unmanned Aerial Systems (UAS). Safety, above all else, is the primary concern in each and every operation, regardless of the nature of the mission.

II. Philosophy and Mission Statement

The Santa Rosa Police Department will use the UAS to protect lives and property in a way that complies with constitutional requirements, state and local law, and Federal Aviation Administration (FAA) regulations as well as departmental policy.

The UAS may support first responders in all-hazards incidents which would benefit from an aerial perspective.

The Federal Aviation Administration provides for the integration of civil unmanned aircraft systems into national airspace in Part 107 of the Federal Aviation Regulations. The regulations took effect on August 29, 2016 and set operational limitations, pilot certification requirements and pilot responsibilities, and aircraft requirements.

The Santa Rosa Police Department recognizes that legislation surrounding UAS is subject to change and will remain aware of and comply with changes to the law.

III. Protection of Rights and Privacy

UAS commanders, operators and observers will have the protection of citizens' civil rights and reasonable expectations of privacy as a key component of any decision made to deploy the UAS. UAS operators and observers will ensure, and will be held accountable for ensuring, that operations of the UAS intrude to a minimal extent upon the citizens of Santa Rosa. To accomplish this primary goal we will:

A. When the UAS is being flown, the onboard cameras will be turned to focus on the mission area and minimize the inadvertent observation of uninvolved persons and property.

B. All video and still images will be maintained in strict compliance with SRPD policies and procedures.

C. SRPD shall not conduct random surveillance activities. The use of the UAS will be restricted to missions that comply with current law and SRPD policy.

D. The authorized missions for the SRPD UAS are:

1. Documentation of crime or traffic collision scenes

2. HAZMAT Response
3. Search and Rescue Missions
4. Barricaded Suspects and other high-risk tactical operations
5. Search/Arrest warrants
6. To assist in the apprehension of criminal suspects
5. Disaster Response (Flood, fire, earthquakes, etc.)
6. Training missions as authorized by the Training Certificate of Authorization
7. Fire Response
8. Other missions as approved by the Chief of Police or Program Manager

F. The Santa Rosa Police Department will form a committee that will meet semi-annually for the purpose of reviewing existing UAS procedures as well as new technologies, laws and regulations on UAS usage. The committee will consist of personnel from the Santa Rosa Police Department and Santa Rosa Fire Department.

IV. **Definitions:**

A. Certificate of Authorization (COA): Authority from the FAA to flywithin specific boundaries and perimeters. Flights cannot take place without either a valid COA or under Part 107 compliance.

V. **Administration**

5.1 Operations Manual

A. The policies and procedures contained in this manual are issued by authority of the Chief of Police. As such, it is an official document of the Santa Rosa Police Department.

B. This manual is not intended to be all-inclusive, but as a supplement to other department guidelines, Federal Aviation Administration regulations, Certificate of Authorization COA, and the aircraft manufacturer's approved flight manual.

C. The Operations Manual has been written to address UAS operations as they existed when it was drafted. Equipment, personnel, environment (internal and external) change over time. The management of change involves a systematic approach to monitoring organizational change and is a critical part of the risk management process. Given this, it is essential that this manual be updated as necessary. The entire manual will be reviewed, at a minimum, annually to assure it is up-to-date. Any changes to the manual will be communicated as currently dictated by department policy.

5.2 Organization

B. The UAS Team shall be comprised of those personnel approved by SRPD and includes operators, observers and others deemed necessary, such as information personnel and those who have an assignment as part of the UAS unit.

C. The UAS unit will be primarily compromised of SRPD employees and volunteers who are trained and qualified on the UAS.

5.3 Personnel

A. UAS Team Commander: A Santa Rosa Police Lieutenant shall be responsible for the overall direction and performance of the UAS Team.

B. UAS Team supervisor: The Sergeant assigned to the UAV Team is responsible for the day-to-day supervision of the UAS Team operations and personnel.

C. UAS Team Supervisor Responsibilities:

1. Maintain all training, flight and maintenance records for each operator and observer as well as individual airframes.

2. Maintain contact with the FAA and familiarity with the pertinent FAA regulations.
3. Evaluate airframes based on mission needs.
4. Post a mission summary to media outlets after first obtaining authorization from UAS Commander.
5. Maintain UAS page on website to solicit community feedback.
6. Publish, or cause to be published, public notification of UAS flights over the City of Santa Rosa as appropriate, based on the operational requirements of the mission.

D. UAS Operators

1. Operators must pass the required training and be certified as remote pilots under Part 107, 14CFR before operating any SRPD UAS.
2. Operators interacting with Air Traffic Control (ATC) shall have sufficient expertise to perform that task readily. Operators must have an understanding of and comply with FAA Regulations applicable to the airspace where the UAS will operate.
3. An operator's primary duty is the safe and effective operation of the SRPD's UAS in accordance with the manufacturer's approved flight manual, FAA regulations and Agency policy and procedures. Operators must remain knowledgeable of all applicable FAA regulations, UAS manufacturer's flight manual and bulletins and SRPD policy and procedures.
4. Operators may be temporarily removed from flight status at any time by the UAS Commander in accordance with SRPD policies and memoranda of understanding.
5. The SRPD Training Team shall maintain copies of FAA certifications, training records, etc. for each operator.

E. UAS Observers

1. An observer's primary duty is to operate the UAS equipment, including cameras, FLIR, radio communications with patrol units, as well as be an observer for anything that may affect the operator's primary duty (see and avoid).
2. Observers must assist in operation of the UAS by clearly communicating to the operator any turning instructions required to stay clear of conflicting air traffic or obstacles. Observers will receive training on rules and responsibilities described in 14 CFR 91.111 (operating near other aircraft), 14 CFR 91.13 (Right-of-Way Rules, cloud clearance, in-flight visibility, and the pilot controller glossary, including standard ATC phraseology and communication).
3. The Department Training Team shall maintain all copies of FAA certifications, training records, etc. for each observer.

5.4 Scheduling

A. To facilitate the broad use of the UAS, it shall be made available for approved missions.

B. To maintain a level of proficiency with the UAS, operators will be required, as part of their acceptance into the UAS unit, to attend training every two months. Training will be coordinated through the UAS Team and announced in advance for scheduling purposes.

5.5 Miscellaneous

A. Inquiries from the news media will be forwarded to the UAS Team Commander, or UAS Team Supervisor. Operators/Observers shall follow currently established department policy regarding interactions and inquiries from the media.

B. Requests for UAS support from other government agencies within or outside the County of Sonoma will be forwarded to the UAS Team Commander and assessed by for consideration. Proper policy and procedure, as well as FAA regulations, shall be followed when accepting mutual aid support for the UAS.

VI. Safety

6.1 Safety Policy

A. The SRPD is committed to maintaining 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 or property.
2. Support for safety training and awareness programs.
3. Regular audits of safety policies, procedures and practices.
4. Monitoring the UAS community to ensure best safety practices are incorporated into the organization.

B. It is the duty of every member within the UAS unit 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 as soon as possible after, if not before, an incident occurs. Any suggestions in the interest of safety should be made to the UAS unit chain of command.

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

6.2 Operational Hazard and Occurrence Report (OHOR) and Investigations

A. Occurrences are unplanned safety related events, including accidents and incidents that could impact safety. A hazard is something that has the potential to cause harm. The systematic identification and control of all major hazards is foundational to

safety.

B. The OHOR concept provides a mechanism to report hazards and occurrences, real and perceived, to those responsible for UAS operations.

C. There is no specific format for the OHOR as the information provided is what is important, not the format, and should be used without hesitation to report any anticipated, current, or experienced safety hazard, or occurrence. Further, the OHOR can be submitted anonymously and to whatever level in the chain of command, to get the matter proper attention, without fear of reprisal.

D. Written memorandums fully explaining the problem will be given to the UAS Commander.

E. Every hazard and/or occurrence will be investigated, with the results and corrective action taken communicated to all members. The investigation will be conducted by a supervisor, under the direction of the UAS Commander, or any other member of the department who has the technical skill necessary to thoroughly conduct the investigation. The services of an independent subject matter expert may be necessary in some cases to assure a thorough and complete investigation.

F. Hazards requiring immediate attention will be brought to the attention of the UASS Commander or direct supervisor, verbally, without delay.

G. All members are authorized to take action to correct a hazard if, in that member's opinion, delay will result in accident or injury. The UAS Team chain of command will be notified immediately in such situations.

6.3 Safety Officer - Operator/Observer/Supervisor

A. In regards to safety, all members of the UAS team are responsible for the following:

1. Ensure all flight operations personnel understand applicable regulatory requirements, standards and organizational safety policies and procedures.
2. Observe and control safety systems by monitoring all operations.
3. Review standards and the practices of departmental personnel as they impact operational safety.
4. Communicate all reported safety related problems and the corrective action taken. If there were any in-flight problems, or learned experiences, the proper procedures for handling that problem should be discussed.
5. Copy and circulate pertinent safety information.
6. Copy and circulate emergency safety bulletins.
7. Place any electronic copies of safety information or bulletins on the SRPD UAS website for members to access.
8. It is emphasized again that safety is the responsibility of ALL members of the UAS unit.

6.4 Safety Training

A. All members shall receive training in the following subjects prior to operating the UAS:

1. Agency commitment to safety
2. Agency policy
3. UAS members' role in safety and Emergency procedures

B. All members shall review the Department's UAS Policy and Procedures on an annual basis and that review shall be noted in their training history.

6.5 Medical Factors

A. Operator and Observers shall only deploy the UAS when rested and emotionally prepared for the tasks at hand.

B. Physical illness, exhaustion, emotional problems, etc., can seriously impair judgment, memory and alertness. The safest rule is not to act as an operator or observer when suffering from any of the above. Members are expected to "stand down" when these problems could reasonably be expected to affect their ability to perform flight duties. A self-assessment of physical condition shall be made by all members during pre-flight activities.

C. Performance can be seriously hampered by prescription and over-the-counter drugs. The UAS Commander will be advised anytime such drugs are being taken. If it is determined that the medication being taken could hamper and/or impair an operator or observer, that member shall be prohibited from the deployment or exercise.

D. No member shall act as an operator or observer within eight hours after consumption of any alcoholic beverage (FAR 91.17).

VII. Training

7.1 Objective

A. The key to continued safe operations is by maintaining a professional level of competency. The first step in this process is establishing minimum qualifications for selecting members, and the second step involves training those personnel.

7.2 Instructors

A. If any members are FAA certified flight instructors, they may be given instructor duties. Such duties can include developing training courses; provide training and student evaluation and documentation.

B. Duties of instructing new members shall fall upon those who have the most flight

time and knowledge of UAS operations. Instructors will be designated based on experience and competency with the UAS operation and approved by the UAS Commander.

7.3 Training Plans

A. All members will have a training plan on file that outlines training objectives for the upcoming year. This training plan will be held in conjunction with the member's normal training file per department policy.

B. The approved training plan will be developed jointly by the UAS Commander, supervisor, UAS Unit members and the department's training unit.

C. All deployments or exercises will be documented and count toward a member's training.

D. It is the member's responsibility to verify their training file contains all pertinent information.

7.4 Initial Training (per UAS Interim Operational Approval Guidance 08-01)

A. Observers must have completed sufficient training to communicate to the pilot any instructions required to remain clear of conflicting traffic. This training, at a minimum, shall include knowledge of the rules and responsibilities described in 14 CFR 91.111, *Operating Near Other Aircraft;* 14 CFR *91.113, Right-of-Way Rules: Except Water Operations; and 14 CFR 91.155, Basic VFR Weather Minimums;* knowledge of air traffic and radio communications, including the use of approved ATC/pilot phraseology; and knowledge of appropriate sections of the *Aeronautical Information Manual.*

B. Before a member can be authorized to conduct flight operations as a UAS operator, he or she must complete at least eight hours of flight training with the UAS instructors to show proficiency of the flight training exercises and the airframe. This must be accomplished to show their ability and knowledge of the UAS.

7.5 Recurrent Training

A. All members within the unit shall maintain proficiency in their operator/observer abilities. Members who do not have any documented training or flight time within a span of 90 days will have to show proficiency before being an operator/observer during a deployment or exercise.

B. Recurrent training is not limited to actual operating/observer skills but includes knowledge of all pertinent UAS/aviation matters.

C. Failure to prove proficiency can result in removal from UAS responsibilities.

7.6 Miscellaneous

A. Depending on the nature of the training request, all efforts will be made to accommodate the hours of training so as little impact is made to staffing levels.

B. All requests for training shall be approved through the member's chain of command and timekeeping during those training hours will be marked by the member's supervisor.

C. Members are encouraged to attend and forward information on FAA sponsored safety seminars. This may be done while on-duty with the approval of their chain of command.

D. Unless approval is obtained in writing in advance, overtime will not be authorized for training.

E. Training shall only be conducted at approved locations and follow the provisions within the approved FAA Training COA.

VIII. General Operating Procedures

8.1 Requests for UAS Support

A. Requests for UAS support shall be made through SRPD Dispatch. Dispatch will forward the request to the UAS Team Commander during normal business hours.

B. Requests for UAS support can be made at any time during the day or night.

C. UAS requests received during non-core business hours will be forwarded to the on-call watch commander.

8.2 Call-out Procedure

A. A supervisor will screen all initial requests to use a UAS from patrol or investigation units.

B. The approving supervisor will then contact the SRPD watch commander to request the deployment of the UAS.

C. The watch commander will contact the UAS Unit Commander or designated representative who will screen the request using the following factors:

1. Is the proposed use of the UAS within the capabilities of the UAS equipment and personnel to perform?
2. Does the proposed use of the UAS fall within the FAA and department policies

and regulations for UAS usage?
3. Can the UAS be deployed safely given current weather conditions?
4. If the UAS deployment requires a warrant, has one been requested and approved?
5. Are sufficient trained and qualified personnel available to safely operate the UAS?

D. The UAS Unit Commander will either accept or decline the request for UAS support. If the request is denied, the UAS Unit Commander will provide a reason for declining the support request to the watch commander who will provide the requestor this information along with the reason for declining. If the UAS Unit Commander accepts the support request, a UAS operator will be assigned who will be provided all available mission information.

E. The UAS operator will contact a certified observer from the list of available trained observers and arrange for the observer to meet the operator at the scene. The UAS operator is responsible for transporting the UAS and all required equipment. Upon arriving at the requested location, the UAS operator will contact the on-scene Incident Commander and will check in and receive a briefing on the mission requested. The UAS operator will make an on-scene determination of the ability of the UAS to perform the requested mission safely and within department and FAA policies and procedures.

F. If the UAS operator determines that the use of the UAS would violate department policy or directives, the UAS operator will inform the Incident Commander of the potential conflict along with recommendations for modifying the requested mission to conform to the department policies and procedures. As this is a change from the original approved mission, the UAS operator will contact the UAS unit chain of command for direction on how to proceed. As soon as possible after the completion of the mission, the UAS operator will make a full report of the circumstances and their concern through the chain of command.

G. UAS operators will have sole discretion for declaring safety or violation of FAA rules. If the UAS operator determines that a requested mission would violate FAA rules or endanger civilians, the UAS operator will respectfully inform the Incident Commander of the reasons for refusing to operate the UAS and contact the UAS chain of command immediately. The UAS will not be flown in this circumstance and the authority of the UAS operator is absolute.

H. If the UAS operator determines that the requested mission will potentially damage the UAS or its associated equipment, the UAS operator will inform the Incident Commander of their concern and suggest mission parameters changes. The UAS operator is the final authority regarding UAS operations.

8.3 Deployment Priorities

A. The UAS shall not be used for the purpose of random surveillance.

B. If several separate requests for UAS support are received simultaneously, they shall be prioritized.

C. In general terms, requests for UAS support are prioritized as:
• Life Safety
• Evidence/Documentation

8.4 Flight Boundaries

A. Although there may be requests for UAS support outside the City of Santa Rosa or County of Sonoma, the certificate of authorization for our UAS restricts deployment outside the County of Sonoma and further restricts the proximity of flight to other locations.

B. At no time shall UAS support be granted outside the City of Santa Rosa without first obtaining an emergency FAA COA and approval by the UAS Commander.

C. Information regarding flight boundaries can be found in the FAA COA and the use of a San Francisco VFR Terminal Area Chart.

D. Maximum altitude shall not be set more than 400 feet AGL, per FAA regulations and terms of the FAA COA.

8.5 Minimum Personnel Requirements

A. Due to the nature of the law enforcement mission, the minimum personnel required on ALL missions will be an operator and observer. Under no circumstances will an operator attempt to complete a deployment alone.

B. Although training is not considered a mission, an observer shall be used.

8.6 Flight Time Limitations

During any 24 consecutive hours, the total flight time of any UAS operator may not exceed 10 hours, which shall include any other unmanned flying by that operator. An operator's flight time may exceed the flight time limits if the assigned flight time occurs during a regularly assigned duty period of no more than 14 hours and:

A. If this duty period is immediately preceded by and followed by a required rest period of at least 10 consecutive hours of rest.

B. If the flight time is assigned during this period, which total flight time when added to

any other unmanned flying by the operator may not exceed 10 hours.

C. If the combined duty and rest periods equal 24 hours.

Each flight assignment must provide for at least 10 consecutive hours of rest during the 24-hour period that precedes the planned end of the agency flight.

D. When an operator has exceeded the daily UAS flight time limitations in this section, because of circumstances beyond control of the agency or pilot, the pilot must have a rest period before being assigned or accepting an assignment for flight time, of at least: Twelve (12) consecutive hours of rest if the flight time limitation is exceeded by more than 30 minutes.

8.7 Personnel Responsibilities for Deployments:

A. Operator

1. The operator is directly responsible for, and is the final authority over the actual operation of the UAS.
2. Operators have absolute authority to reject a flight based on personnel safety or violation of FAA regulations. No member of the Police Department, regardless of rank, shall order an operator to make a flight when, in the opinion of the operator, it poses a risk to personnel or is in violation of FAA regulations.
3. Operators are responsible for compliance with this manual, department policy and procedure and FAA regulations.
4. The operator's main duty during the deployment of the UAS is to operate the UAS safely while accomplishing the goals of the deployment.
5. Operators shall see-and-avoid any obstacle that will threaten the safety of flight during the mission.
6. Operators shall be responsive to the requests of the observer in order to accomplish the deployment.
7. Operators shall be responsible for documentation for mission training and updating of the flight book.

B. Observer

1. Observers shall see-and-avoid any obstacle that will lessen safety during the mission.
2. Observers are responsible for the law enforcement aspect of the deployment.
3. Observers shall operate any attachments to the UAS, allowing the operator to maintain complete focus on the operation of the UAS.
4. Observers shall remain alert for suspicious persons or activities on the ground and coordinate response by ground units.
5. Observers shall monitor radio updates from other personnel involved in an operation.
6. Observers shall assist the operator in the main objective of safe operations of

theUAS.

8.8 Personal Equipment

A. Operators/Observers shall wear eye protection at all times while the UAS is in flight.
B. Operators/Observers will take into consideration the current weather conditions when planning to deploy, and wear appropriate clothing to deploy comfortably.
C. There are no documented issues with the use of the radio or cellular phones during the deployment of the UAS, but the operator/observer should, at all times, take into consideration safe operation of the UAS when using the radio or another device. (Use of the radio or other device is strictly prohibited by the operator during flight per the COA.)

D. Operators/Observers shall wear clothing that easily identifies them as Santa Rosa Police Department personnel.

IV. Pre Flight/Post Flight Actions

9.l Inspections

A. Operators/Observers are both responsible for a thorough pre-flight inspection of the UAS.

B. Before and after each deployment (whether an incident or training), the operator and observer shall conduct a thorough inspection of the UAS in accordance with the instructions contained in the manufacture's user's manual.

C. Any issues found that will put in jeopardy the safe operation of the UAS shall be documented and resolved immediately prior to flight.

D. It has been recognized that the use of a checklist is a significant method to combat UAS accidents. A pre-flight and post-flight checklist shall be utilized prior to each flight.

E. Any physical equipment malfunctions that cannot be resolved on-site, and which have an impact on safety or the mission, will override the deployment. These issues will be resolved before flight.

F. Operators/Observers will ensure that no items are attached to the UAS prior to flight

that are not required for safe operation and to complete the mission goal.

9.2 Weather

A. Before each deployment, the operator/observer shall gather enough information to make themselves familiar with the weather conditions in the area of deployment. The operator shall utilize FAA approved weather resources to obtain the current weather conditions.

B. An anemometer should be utilized in order to better estimate the wind speed at the launch site to determine if it is within the capabilities of the airframe being flown.

C. Operators/Observers should use the Beaufort Scale when making deployment decisions in regards to wind conditions. This scale can be located in the manufacture's user manual.

D. The weather conditions reported for the operation shall be recorded in the flight log.

E. The operator shall ensure that the flight will occur within FAA VFR weather requirements.

9.3 Documentation and Evidence

A. Inspection and weather will be documented prior to flight within the log book.

B. After each flight, the operator will complete a statement documenting the UAS operations.

C. After each deployment, video obtained by the UAS Operation will be submitted to evidence in accordance with SRPD policies and procedures.

D. Aerial photography (still or video) shall be stored and maintained in accordance to department policy.

E. The operator and/or observer of the UAS is responsible for evidence handling as well as writing any supporting documentation for the incident.

9.4 Planning

A. The operator/observer shall familiarize themselves with all available information concerning the deployment including, but not limited to, the weather conditions, hazards, description of the incident, deployment goals, etc.

B. Operators will ensure that the location for take-off and emergency landing is adequate for a safe deployment.
   1. The take-off/landing location should be clearly marked and identifiable.

2. At least one emergency landing area should be identified per deployment.
3. Operators will ensure that they are aware of their surroundings in the event that an emergency landing is necessary. This includes the ability to recover the UAS.

9.5 Checklists

A. Operators shall utilize the checklists to ensure the highest level of safety for deployment.

B. Prior to flight, the flight log shall be initiated.

9.6 Maintenance

A. Although there are few parts on the UAS that need servicing, operators are responsible for following the manufacturer's maintenance schedule and properly documenting maintenance activities.

B. Any issues that arise during maintenance that cannot be resolved by routine methods shall be forwarded to the manufacturer for further technical support.