

Alameda County Sheriff's Office

**Small Uncrewed Aerial Systems
(sUAS)**

Operations Manual



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1. Preface:

The following procedures are intended to promote the safe, efficient and lawful operation of the Alameda County Sheriff's Office (ACSO) Small Uncrewed Aerial System (sUAS) Unit. Safety, above all else, is the primary concern in each operation, regardless of the nature of the mission.

2. Philosophy and Mission Statement:

It shall be the mission of those personnel of ACSO who are trained in the use of sUAS to follow procedures that are intended to promote the safe, efficient, and lawful operation of the Sheriff's Office sUAS aircraft to protect the lives and property of citizens and first responders. The personnel and sUAS will be in full compliance with applicable laws and regulations including, but not limited to, applicable State and Federal Constitution and Federal Aviation Administration (FAA) regulations.

The sUAS can support first responders in any and all-hazards incidents which would benefit from an aerial perspective. These uses would include but not be limited to: Search and Rescue missions, Explosive Ordnance Detection missions, disaster response, barricaded suspects, hostage situations and other high-risk tactical operations, hazardous materials spills, natural disasters, terrorist related events, fire related incidents, crime scene preservation, etc.

Both public and private operators of uncrewed aircraft systems have a responsibility to not infringe on the rights or property of the citizens of California. Any data, information, photographs, video or recordings of individuals, both in public and private, should be minimized and retained in a manner consistent with current privacy standards and per ACSO agency policies.

3. Protection of Rights and Privacy:

sUAS Commanders, operators and observers will consider the protection of individual civil rights and the reasonable expectation of privacy as a key component of any decision made to deploy the sUAS. Each sUAS operator and observer will ensure that operations of the sUAS are consistent with local, state, and federal law. To accomplish this primary goal, ACSO members will:

- A. When the sUAS is being flown, operators will take steps to ensure the camera is focused on the areas necessary to the mission and to minimize the inadvertent collection of data about uninvolved persons or places
- B. All video and still images will be maintained in strict compliance with ACSO Policies and Procedures
- C. ACSO will maintain a website for public input to address citizens' concerns and recommendations

D. ACSO does not conduct random surveillance activities. The use of the sUAS will be tightly controlled and regulated.

E. **The authorized missions for the ACSO sUAS Unit are:**

1. **Post-incident crime scene preservation and documentation.**
2. **Explosive ordnance disposal (EOD) missions.**
3. **Response to hazardous material (HAZMAT) spills.**
4. **Search and Rescue (SAR) missions**
5. **Public safety and life preservation missions to include barricaded suspects, hostage situations, active shooters, apprehension of armed and dangerous and/or violent fleeing suspects.**
6. **Disaster response and recovery to include natural or human caused disasters including a full overview of a disaster area for post incident analysis and documentation.**
7. **Training missions**
8. **In response to specific requests from local, state or federal fire authorities for fire response and prevention.**
9. **When there is probable cause to believe that (1) the UAS will record images of a place, thing, condition, or event; and (2) that those images would be relevant in proving that a felony had occurred or is occurring, or that a particular person committed or is committing a felony and use of the UAS does not infringe upon the reasonable expectation of privacy.**
10. **Pursuant to a search warrant**
11. **Operational pre-planning (planning for service of search and arrest warrants to provide up-to-date intelligence and officer safety information (e.g., terrain, building layout, ambush) to minimize the use of force.**
12. **Scene documentation for evidentiary or investigation value (e.g., crime, collision, or use of force scenes)**
13. **Sideshow events where vehicles, spectators and reckless driving is present.**
14. **A UAS specifically designated to the Drone as First Responder (DFR) program can be deployed to any call for service received by Emergency Services Dispatch requiring a staff member be dispatched, including using the UAS in lieu of dispatching a staff member.**
15. **A Sheriff's Office event, which is non-enforcement related, to memorialize an event (e.g., academy graduation, parade, funeral).**

F. ACSO's sUAS program will operate strictly within the law and regulations. We will balance all operations with the need to accomplish the mission while maintaining public privacy and the freedom from intrusion.

G. Prohibited use:

1. Conduct random surveillance activities
2. Target a person based solely on individual characteristics, such as race, ethnicity, national origin, religion, disability, gender or sexual orientation
3. Conduct any business other than official agency business

4. **Definitions:**

- A. Certificate of Authorization (COA): Issued by the FAA which grants permission to fly within specific boundaries and perimeters. Missions cannot take place without a valid operational COA or an FAA approved Special Government Interest (SGI) waiver.
- B. Small Uncrewed Aerial System (sUAS): Consists of the small, uncrewed aircraft weighing under 55 lbs., the command system, a secure control link, and other related safety support equipment.
- C. Uncrewed Aerial Vehicle (UAV): An aircraft that is intended to navigate in the air without an on-board pilot.
- D. sUAS Flight Crewmember: A pilot, visual observer, or other persons assigned duties for a sUAS for the purpose of flight.
- E. Uncrewed Aircraft Pilot: A person exercising control over uncrewed aircraft during flight. The pilot will be ultimately responsible for the operation and solely responsible for the input of commands/piloting during flight. The pilot will be certified in the operation of the sUAS by successful completion of an approved training course. The pilot must meet standards required by the FAA. Pilots are authorized to evaluate and accept or decline any mission or portion thereof due to safety concerns

5. **Administration:**

5.1 Operations Manual

- A. The policies and procedures contained in this manual are issued by authority of ACSO. As such, it is an official document of ACSO.
- B. This manual is not intended to be all-inclusive, but as a supplement to other department guidelines, FAA regulations, COA, and the aircraft manufacturer's approved user manual.
- C. The Operations Manual has been written to address ACSO's sUAS 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 continually updated as necessary. The entire manual will be reviewed annually.

All procedures, laws and regulations of ACSO's sUAS usage shall be reviewed as follows: The Commander of Countywide Services, sUAS management and others as designated by the Sheriff shall meet quarterly on the use of the sUAS to include an audit review, flight documentation review and provide an annual report to the Sheriff.

- D. A copy of this manual will be issued to every person assigned to the sUAS Unit and will be made accessible to all ACSO personnel.

5.2 Organization

- A. The sUAS will only be operated by personnel who have been trained and certified in the operation of the system. All agency personnel with sUAS responsibilities, including command officers, will be provided training in the Policies and Procedures governing sUAS use.
- B. The sUAS unit will be primarily comprised of qualified and trained Sheriff's Office personnel.

5.3 Personnel

- A. The sUAS management is responsible for the overall direction and performance of the sUAS unit and will exercise command and control over both.
- B. The sUAS management is responsible for the day-to-day supervision of the unit and its personnel.
- C. sUAS management 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 the Sheriff
 - 5. Maintain sUAS page on the ACSO website to solicit feedback
- D. Uncrewed Aircraft Pilot /Operators
 - 1. To be considered for selection as an sUAS operator, sworn applicants must pass a written test, and oral interview. Applicants are not required to possess a Private Pilot Certificate or a Class 2 Medical Certificate. Applicants must pass the FAA Part 107 Test, must be FTO trained and have a minimum of 1 year of patrol experience for sworn personnel.
 - 2. Uncrewed Aircraft Pilot /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 sUAS will operate. Pilots must have in their possession a current FAA Part 107 license during missions.
 - 3. An Uncrewed Aircraft Pilot/Operator's primary duty is the safe and effective operation of ACSO's sUAS in accordance with the manufacturer's approved user manual, FAA regulations and ACSO Policies and Procedures. Operators must remain knowledgeable of all FAA regulations, sUAS manufacturer's user manual updates and ACSO Policies and Procedures.
 - 4. Uncrewed Aircraft Pilot/Operators may be temporarily removed from flight status at any time by sUAS management for reasons including performance, proficiency, physical condition, failure to attend two or more training days in a three-month span, etc. Should this become necessary, the operator will be notified verbally and

in writing of the reason, further action to be taken and expected duration of such removal.

5. sUAS management shall maintain a file for each Uncrewed Aircraft Pilot/Operator which shall include copies of FAA certifications, training records, etc. This file will be reviewed in accordance with current ACSO Policies and Procedures.

E. Visual Observers

Visual Observers (VO) must be trained to recognize and overcome visual hazards and obstacles which may pose a safety hazard during the UAV flight. This training must be documented and available if requested by an authorized representative. Training documentation will be kept on file at the sUAS office in accordance to sUAS Policies and Procedures.

5.4 Facilities

- A. The sUAS and all related equipment will be available and issued at the sUAS office or at a secure location as designated by the Sheriff.
- B. Personnel will not leave any of the designated facilities without ensuring the sUAS equipment is secured.
- C. All personnel are equally responsible for maintaining the facilities in a neat, clean and orderly fashion.

5.5 Scheduling

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

5.6 Miscellaneous

- A. Inquiries from the news media will be forwarded to the Public Information Officer. Operators/Observers shall follow currently established ACSO Policies and Procedures regarding interactions and inquiries from the media.
- B. Complaints or inquiries regarding sUAS operations shall be referred to Internal Affairs.

6. Safety:

6.1 Safety Policies

- A. ACSO 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. 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 conduct.
 3. Support for safety training.
 4. Conduct regular audits of safety policies, procedures and practices.
 5. Monitor the sUAS community to ensure best safety practices are incorporated into the organization.
- B. It is the duty of every member within the sUAS unit to contribute to the goal of continued safe operations. This contribution may come in many forms and always includes operating in the safest manner practical 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 sUAS unit chain of command.
- C. If any member observes or has knowledge of an unsafe or dangerous act committed by another member, the sUAS management 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 that is either man made or natural. 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 s 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 any level in the chain of command to get the matter proper attention without fear of reprisal.
- D. Written memorandums fully explaining the problem can be given to the sUAS management.
- 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 Special Operations Division Captain, 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 sUAS management 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 sUAS unit chain of command will be notified immediately in such situations.

6.3 Safety Officer- Operator/Observer/Supervisor

- A. In regard to safety, all members of the sUAS unit 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. It is emphasized again, that safety is the responsibility of ALL members of the sUAS unit

6.4 Safety Training

- A. All members shall receive training in the following subjects prior to operating the sUAS:
 - 1. Agency commitment to safety
 - 2. Agency policies
 - 3. sUAS members role in safety and Emergency procedures
- B. All members shall review the Department Safety Policies 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 sUAS when rested and emotionally prepared for the tasks at hand.
- B. Physical illness, exhaustion, emotional problems, etc., can seriously impair judgment, memory and alertness. 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 sUAS management will be advised anytime such drugs are being taken. If it is determined that the medication being taken could ill effect 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).

7. Training:

7.1 Objective

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 providing entry level training to those personnel.

7.2 Instructors

Duties of instructing new members shall fall upon those who have the most flight time and knowledge of sUAS operations. Instructors will be designated based on experience and competency with the sUAS operation and approved by sUAS management.

7.3 Training Plans

- A. The sUAS unit 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 unit's normal training files per agency policies
- B. The approved training plan will be developed jointly by sUAS management, sUAS 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 sUAS Interim Operational Approval Guidance 08-01)

- A. Upon acceptance to the sUAS unit, the new member shall acquire an FAA Part 107 License.
- B. Observers must have completed sufficient training to communicate to the pilot any instructions required to remain clear of conflicting traffic. This training will be documented, and the documentation will be kept on file in the sUAS office per training policies.
- C. Before a member can be authorized to conduct flight operations as a sUAS operator, they must complete at least eight hours of flight training with the sUAS instructors to show proficiency of the flight training exercises and the airframe. This must be accomplished to show their ability and knowledge of the sUAS.

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 60 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 sUAS/aviation matters.
- C. Failure to prove proficiency can result in removal from sUAS 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 advance, overtime will not be authorized for training.
- E. Training shall only be conducted as approved by the Sheriff or his designee.

8. General Operating Procedures:

8.1 Requests for sUAS Support

- A. All requests for sUAS services will go through Sheriff's Office Emergency Services Dispatch. Sheriff's Dispatch will notify sUAS management of the request for service and for approval to activate the on-call team. In the absence of those management personnel or when extenuating circumstances exist, the ETS Watch Commander or any member of the Sheriff's Office Command Staff can approve an sUAS call-out.
- B. Requests for sUAS support can be made at any time during the day or night.

8.2 Call-out Procedure

- A. Per Specialized Services Section P&P 5.07, requests for a sUAS call-out should be made to Sheriff's Office Emergency Services Dispatch. Dispatch personnel receiving the request for an sUAS call-out shall contact the on-call sUAS manager with the available information regarding the request. The sUAS manager will gather the information pertaining to the request. The sUAS manager will contact the sUAS on-call team and notify them of the mission.

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

- C. If the sUAS operator determines that the requested mission will potentially damage the sUAS or its associated equipment, the sUAS operator will inform the Incident Commander of their concern and suggest changing the mission parameters. The sUAS operator and management are the final authority regarding sUAS operations.

8.3 Deployment Priorities

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

- B. If several separate requests for sUAS support are received simultaneously, they shall be prioritized as:
 - 1. Life, Safety and Property
 - 2. Evidence/Documentation

8.4 Personnel Responsibilities for Deployments

- A. Operator
 - 1. The Operator/ Pilot in Command (PIC) is directly responsible for, and is the final authority over the actual operation of the sUAS
 - 2. Operators have absolute authority to reject a flight based on personnel safety or violation of FAA regulations. No member of ACSO, 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, agency Policies and Procedures and FAA regulation
 - 4. The operator's main duty during the deployment of the sUAS is to operate the sUAS safely while accomplishing the goals of the deployment.
 - 5. Operators shall see-and-avoid any obstacle that will lessen safety 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 completion of mission forms, risk analysis forms and appropriate law enforcement reporting and evidence submission

- B. Visual Observers
 - 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 sUAS, allowing the operator to maintain complete focus on the operation of the sUAS

4. Observers shall remain alert for suspicious persons or activities on the ground and coordinate response by ground units
5. Observers shall monitor the radio updates
6. Observers shall assist the operator in the main objective of safe operations of the sUAS

8.5 Personal Equipment

- A. Operators/Observers will take into consideration the current weather conditions when planning to deploy and wear appropriate clothing.
- B. The operator should take into consideration safe operation of the sUAS when using radios or other devices.
- C. Operators/Observers shall wear sUAS Unit uniform attire while deployed on missions.

9. Pre-Flight/Post Flight Actions:

9.1 Inspections

- A. Operators/Observers are all responsible for a thorough pre-flight inspection of the sUAS.
- B. Before and after each deployment (whether an incident or training), the operator and observer shall conduct a thorough inspection of the sUAS in accordance with the instructions contained in the manufacturer's user manual.
- C. Any issues found that will put in jeopardy the safe operation of the sUAS shall be documented and resolved immediately prior to flight.
- D. It has been recognized that the use of a pre-flight and post-flight checklist is a significant method to prevent sUAS accidents. A checklist will be utilized prior to each flight.
- E. Any equipment malfunction that cannot be resolved on-site, and which has an impact on safety or the mission, will terminate the deployment. These issues shall be resolved before flight.

9.2 Weather

- A. Before each deployment, the operator/observer will ensure that he/she gathers enough information to make themselves familiar with the weather situation existing throughout the area of deployment. The operator shall utilize FAA approved weather resources to obtain the latest and most current weather conditions.
- B. An anemometer should be utilized in order to better estimate the wind speed and determine if it is within the capabilities of the airframe being flown.
- C. Operators/Observers should use the Beaufort Scale when making deployment decisions regarding 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 Mission Report Form.
- E. The operator shall ensure that the flight will occur within FAA weather requirements for uncrewed aircraft.

9.3 Documentation and Evidence

- A. Inspection and weather will be documented prior to flight and recorded in the Mission Report Form.
- B. Upon completion of each sUAS mission the recorded data shall be reviewed and evaluated for evidentiary value. Data of identifiable individuals captured during a sUAS mission shall not be retained unless there is reasonable suspicion that evidence of criminal activity is present. All retained data shall be maintained or destroyed pursuant to Sheriff's Office records retention and evidence policies and in compliance with applicable laws and regulations. Pursuant to Government Code section 6254 (California Public Records Act-) all sUAS data is considered a "law enforcement investigatory file" and is exempt from disclosure under the CPRA
- C. After the mission is complete, an operator on scene shall obtain a report number and provide the pertinent information for the detail to dispatch.
- D. An operator on scene shall be responsible for evidence handling as well as writing any supporting documentation (Police Report) 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. Prior to each sUAS flight a Notice To Airmen (NOTAM) will be filed with the FAA and the closest Airport control tower shall be notified if required.
- 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 if an emergency landing is necessary. This includes the ability to recover the UAV.

9.5 Checklists

- A. Operators shall have and 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 sUAS that need servicing, it is necessary that the manufacturer's maintenance schedule is followed and properly documented.
- B. Any issues that arise during maintenance that cannot be resolved by routine methods shall be forwarded to the manufacturer for further technical support.

9.7 Other

Operators/Observers will ensure that no items are attached to the sUAS prior to flight that are not required for safe operation and to complete the mission goal unless exigency for safety/life exists to attach an object.