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PART 01: ADMINISTRATION

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I. PURPOSE

The purpose of this policy is to provide administrative policies and guidelines for the unmanned aircraft system (UAS) program.

II. SCOPE

This policy shall apply to all San Diego Fire-Rescue Department (SDFD) personnel. Currently, the UAS program is under the command and control of the Bomb Squad. All UAS operations must be approved by the Bomb Squad Commander/UAS Program Manager.

III. AUTHORITY

The fire chief authorizes the information within this policy.

IV. DEFINITIONS

- A. Certificate of Waiver or Authorization (COA): Document issued by the Federal Aviation Administration (FAA) that authorizes public aircraft operations in the National Airspace System (NAS). A certificate of waiver will also allow a small UAS civil operation to deviate from certain provisions of Part 107 if the administrator finds that the proposed operation can safely be conducted under the terms of that certificate of waiver.
- B. Civil Aircraft: All aircraft that are not public aircraft.
- C. Control Station: The interface used by the remote pilot to control the flight path of the unmanned aircraft.
- D. Data Communications Links: All links between the unmanned aircraft and the control station, which includes the command, status, communications, and sensor/payload links.
- E. Federal Aviation Regulations, Part 107 – Small Unmanned Aircraft Systems: Regulations that apply to the registration, airman certification, and operation of civil small unmanned aircraft systems.
- F. Flyaway: A lost link situation where the UAS fails to initiate pre-set lost link procedures creating an emergency situation.
- G. Lost Link: An interruption or loss of the control link between the control station and the UAS, preventing control of the aircraft.
- H. Model Aircraft: An unmanned aircraft that is capable of sustained flight in the atmosphere, flown within visual line of sight of the person operating the aircraft, and flown only for hobby or recreational purposes.

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- I. National Airspace System (NAS): The common network of United States airspace including air navigation facilities, equipment, and services; airports or landing areas, etc.
- J. Person Manipulating the Controls (PMC): A person other than the RPIC who is controlling the flight of an UAS under the supervision of the RPIC.
- K. Remote Pilot in Command (RPIC): The remote pilot in command has the final authority and responsibility for operation and safety of a small UAS operation.
- L. Small Unmanned Aircraft: An unmanned aircraft weighing less than 55 pounds, including everything that is on board or otherwise attached to the aircraft.
- M. Unmanned Aircraft System (UAS): An unmanned aircraft and its associated elements (including communication links and the components that control the unmanned aircraft) that are required for the safe and efficient operation of the unmanned aircraft in the NAS.
- N. UAS Flight Crewmember: Includes the remote pilot in command, person manipulating the flight controls of the UAS, and visual observers (VO). May include other persons as appropriate or required to ensure safe operation of the aircraft.
- O. Unmanned Aircraft System (UAS): An aircraft that is operated without the possibility of direct human intervention from within or on the aircraft. Also called Remote Piloted Aircraft and/or “drones.”
- P. Visual Line-of-Sight (VLOS): The RPIC, the visual observer , and the person manipulating the flight control of the small UAS must be able to see the unmanned aircraft throughout the entire flight in order to: (1) know the unmanned aircraft’s location; (2) determine the unmanned aircraft’s attitude, altitude and direction of flight; (3) observe the airspace for other air traffic or hazards; and (4) determine that the unmanned aircraft does not endanger the life or property of another. This VLOS ability must be exercised throughout the entire flight of the small unmanned aircraft by either: (1) the visual observer; or (2) the RPIC and person manipulating the flight controls of the small UAS (if that person is not the RPIC).
- Q. Visual Observer (VO): A UAS flight crewmember designated by the RPIC to assist the RPIC and the person manipulating the flight controls of the small UAS to see and avoid other air traffic or objects aloft or on the ground. VO shall be used on all flights and will be a licensed pilot. In the event of an emergency the RPIC may designate an unlicensed VO.

V. POLICY

A. INTRODUCTION

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1. The manual is not intended to be all-inclusive, but as a supplement to other department policies and procedures, Federal Aviation Regulations, UAS manufacturers' approved flight manual, etc. To enhance the level of safety and assure appropriate use of the system, these documents must be followed without deviation, unless necessary during an emergency, or with appropriate supervisory approval.
2. This manual has been written to address UAS operations, as they existed when it was drafted. Technology, 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, it is essential that this manual be continually updated as necessary. This entire manual will be reviewed periodically to assure it is up to date. Any changes to the manual will be communicated immediately to all members.
3. Given the rapid pace of the development of unmanned aircraft technology, the Department will examine their existing UAS policies related to the collection, use, retention and dissemination of information obtained by agency UAS to ensure that privacy, civil rights and civil liberties are protected. This review will take place annually and prior to deploying new unmanned aircraft technology/systems.
4. A copy of the manual (electronic or paper) will be issued to every member having UAS responsibilities.

B. ORGANIZATION

1. The UAS Program shall be comprised of specialty personnel and may include pilots, observers and others as deemed necessary.
2. UAS operations are under the direct command of the UAS program manager.
3. The UAS Program will be comprised of personnel trained in UAS operations.

C. UAS PERSONNEL

1. The UAS Program Manager
 - a. Serves as the officer-in-charge of the unit and is responsible for the overall management of the operation.
 - b. Given the technical nature of aviation, the UAS program manager may, at their discretion, assign duties for UAS operations to any member of UAS Program with the knowledge, skills, and abilities to safely and effectively manage the operation.
2. UAS Program Lead
 - a. The UAS program manager shall assign a team lead for the UAS Program.

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- b. The UAS program lead shall coordinate and monitor all UAS documentation and reporting.
- 3. UAS Program Lead Instructor Pilot
 - a. The UAS program manager shall assign a lead instructor pilot.
 - b. The UAS program lead instructor pilot shall conduct all platform specific flight training.
 - c. The UAS program lead instructor pilot may designate additional instructor pilots as necessary.
- 4. UAS Pilots
 - a. To be considered for selection as a UAS pilot, applicants meet agreed upon standards.
 - b. A UAS pilot's primary duty is the safe and effective operation of the department's UAS in accordance with manufacturers' approved flight manual, Federal Aviation Administration (FAA) regulations, and agency procedures. Pilots must remain knowledgeable of all FAA regulations; aircraft manufacturer's flight manual and SDFD policies and procedures.
 - c. In order to fly a mission (other than flights required for initial training or currency) pilots must have completed three currency events within the previous 90 days. Currency events include landings, takeoffs, and simulator flights. Department will provide adequate on duty opportunity to maintain currency requirements.
 - d. UAS pilots may be temporarily removed from flight status at any time by the fire chief or the UAS program manager, for reasons including, but not limited to, performance, proficiency, etc. Should this become necessary, the pilot will be notified.
- 5. Flight Observers
 - a. The observer's primary function is to assist the RPIC or PMC to see and avoid other air traffic or objects aloft or on the ground.

D. PROGRAM REPORTING REQUIREMENTS

- 6. Auditing and Annual Reporting
 - a. The UAS program lead shall audit flight documentation monthly. This audit will include the following:
 - 1) A summary of missions/uses, appropriateness of uses, evaluation of the effectiveness of the UAS, safety concerns, and equipment concerns, etc.
 - 2) An audit of flight time and pilot currency.
 - b. The results of the audit will be documented and submitted to the UAS program manager for review.

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7. Emergency Reporting

a. Abnormal Situations

- 1) Lost link
- 2) Alternate landing/recovery site
- 3) Loss of GPS
- 4) Loss of video
- 5) Avoidance of proximate manned or unmanned aircraft without imminent danger of collision

b. Emergency Situations

- 1) Fly-aways
- 2) Loss of control link
- 3) Avoidance of manned or unmanned aircraft with imminent danger of collision
- 4) Battery fires

- c. Pilots will immediately report any abnormal or emergency situations to the UAS program manager. If the UAS program manager is unavailable the UAS program lead shall be notified.

8. Accident Reporting

a. An accident is defined as:

- 1) Damage to any property, other than the UAS, if the cost is greater than \$500 to repair or replace the property
- 2) Serious injury to any person or any loss of consciousness
- 3) Total UAS loss
- 4) Substantial damage to the UAS where there is damage to the airframe, powerplant, or onboard systems that must be repaired prior to further flight

b. All accidents must be reported by the pilot to the FAA within 24 hours of the operation and shall include:

- 1) UAS RPIC's name and contact information
- 2) UAS RPIC's FAA airman certificate number
- 3) UAS registration number
- 4) Location of the accident
- 5) Date of the accident
- 6) Time of the accident
- 7) Person(s) injured and extent of damage, if any or known
- 8) Description of what happened

E. INQUIRIES AND COMPLAINT PROCESSING

1. External Inquiries or Complaints

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- a. Any member with sufficient knowledge about the UAS program can address simple questions from the public about the system and how the agency utilizes the technology.
 - b. Should there be an inquiry questioning the need for, or appropriate use of the UAS, or agency policies and procedure governing its use, they will be referred to a supervisor for handling.
2. Internal Inquires or Complaints
- a. Any member of the agency, including employees and/or contractors hired to provide UAS services, is required to immediately report suspected cases of misuse or abuse of UAS.
 - b. Such report shall be made to whatever level of the agency chain of command necessary to initiate an investigation into the suspected misuse.
3. Complaint Investigations
- a. Should there be a complaint alleging inappropriate use of the UAS, that complaint will be handled in accordance with agency protocols for internal investigations.
 - b. Any complaint alleging a violation of a person's civil rights by use of the UAS will be reported to the Fire Chief and must result in a formal, documented internal investigation.
 - c. Unauthorized or inappropriate use of an unmanned aircraft will result in strict accountability, in accordance with Department policy.
9. News Media
- a. Inquiries from the news media will be forwarded to a supervisor, or Department media relations/public information office for response.