SALINA POLICE DEPARTMENT GENERAL ORDER	Number P3225
SUBJECT: **SMALL UNMANNED AIRCRAFT SYSTEMS / DRONES**	
EFFECTIVE: 04/15/24 ISSUED: 04/15/24 REVIEW: Annual	
CANCELS:	
AMENDS: P3225 issued: 03/01/19	Distribution
CALEA References: 17.5.2.	A

POLICY

The deployment of small Unmanned Aircraft Systems (sUAS), also known as 'drones,' by the Department will assist the agency as a force multiplier, providing increased situational awareness and enhanced officer and public safety. Deployments of this technology will be in direct support of emergency events, crime scene and vehicular accident forensics collection, tactical operations, officer training, firefighting support activities, disaster response and any other mission requiring aerial surveillance within a defined incident perimeter.

This policy establishes sUAS program management, operational requirements, reporting and records management, and safety considerations necessary to support law enforcement officers conducting missions as permitted by the Federal Aviation Administration (FAA) issued Certificate of Waiver or Authorization (COA) and/or civil/commercial operations under 14 CFR part 107. Further, this policy is designed to comply with all applicable federal, state and local statutes.

As with all investigative methods, sUAS must be operated consistent with the U.S. Constitution. Accordingly, agency personnel shall abide by the Fourth Amendment and protect citizens from unreasonable searches and seizures. The sUAS shall never be used solely for the purpose of monitoring activities protected by the First Amendment or the lawful exercise of other rights secured by the Constitution and laws of the United States except as necessary to protect people who are exercising their constitutional rights. Agency personnel must be trained on, and abide by, all applicable federal, state and local legal standards applicable to the deployment and use of this technology. Finally, sUAS shall only be deployed in connection with properly authorized investigations and emergency response activities, and shall only be deployed within the context of existing and applicable federal, state and local laws/regulations and agency safeguards.

DEFINITIONS

D1 **Airworthiness** - A condition in which the small Unmanned Aircraft System (sUAS) (including the aircraft, airframe, engine, propeller, accessories, firmware, software and control station elements) conform to its design intent and is determined to be in condition for safe operation.

D2 **Avionics** - Consists of the complete electronics hardware and software for command and control of the small Unmanned Aircraft (sUA) (i.e., Global Positioning System (GPS), battery(s) to power sUA motors and electronic systems, radio elements with antennas, etc.).

D3 **Beyond Visual Line-of-Sight, (BVLOS)** - Operation of the sUAS when the Remote Pilot-in-Command (RPIC) or Visual Observer(s) (VOs) responsible for controlling the trajectory of the sUA cannot maintain direct visual contact with the sUA unaided other than by corrective lenses (spectacles or contact lenses), sunglasses or both.

D4 **Certificate of Waiver or Authorization (COA)** - Certificate of Waiver or Authorization issued by the Federal Aviation Administration that permits public agencies and

organizations to operate a particular aircraft for a particular purpose in a particular area or waives specific requirements for operations.

D5 **14 CFR Part 107** - The Small UAS rule to allow for routine civil operation, to include public safety, of sUAS in the National Airspace System (NAS), and provides safety rules for those operations. The rule defines sUAS as unmanned aircraft weighing less than 55 pounds.

D6 **Fly-Away** - Sudden unexpected, unplanned, unintended sUA flight outside of the operational boundaries in (altitude/airspeed/lateral limits) as the result of a failure of the navigation control element or onboard systems or both.

D7 **Ground Control Station (GCS)** - The interface between the Remote Pilot-in-Command (RPIC) and the sUA. This may be a handheld control box, a laptop, a computer, or other device together with all associated hardware, power, antennas, cabling, etc.

D8 **Payload** - Any sensors or equipment attached to or carried by the sUA for the purpose of collecting data, or otherwise essential to the mission.

D9 **Reasonable Expectation of Privacy** - An element of privacy law that determines in which places and in which activities a person has a legal right to privacy. Reasonable expectation refers to a person's belief that they are in a place where their activities are protected from being discovered or known, such as in their domicile.

D10 **Remote Pilot-in-Command (RPIC)** - The person who is qualified and designated by the agency who is directly responsible for and is the final authority as to the operation of the sUAS (as described by Federal Aviation Regulations (14 CFR ~ Part 91.3); and holds the appropriate FAA sUAS airman certificate (if applicable) for the conduct of the flight.

D11 **Safety Office**r - The Safety Officer is responsible for assisting the RPIC with safety-related issues and providing support to the RPIC during sUAS operations. The Safety Officer will act as the liaison officer for coordination with the incident commander, on scene commander or special response personnel on behalf of the RPIC. An Observer can fulfill the responsibilities of the Safety Officer.

D12 **Small Unmanned Aircraft (sUA)** - A small unmanned aircraft with a maximum takeoff weight (aircraft and payload) less than 55 pounds.

D13 **Small Unmanned Aircraft System (sUAS)** - A small unmanned aircraft and all of its associated elements, accessories, etc. (i.e., telemetry links, payload elements and control interfaces, ground control station, antennas, avionics equipment, etc.), that are required for the safe and efficient operation of the sUA in the national airspace system.

D14 **sUAS Flight Crewmember** - A remote pilot, visual observer, payload operator, and/or any other designated person assigned duties for sUA operations.

D15 **Visual Line-of-Sight (VLOS)** - The ability of the RPIC and/or VO(s) to be able to see and determine the trajectory of the sUA throughout the entire flight with vision that is unaided other than by corrective lenses or sunglasses or both, and to determine its movement relative to intruding aircraft, obstacles, and terrain and observe the airspace for other air traffic or hazards to determine that the sUA does not endanger the life or property of another.

D16 **Visual Observer (VO)** - A person who is designated by the agency and/or RPIC to assist the RPIC (or the person manipulating the flight controls) to maintain VLOS with the sUA.

PROCEDURE

1. Administration

1.1. The unmanned aerial program will be comprised of a Sergeant who directly supervisors the program and crew members. The unmanned aerial program will be under the direction of the Chief or designee who must specifically authorize all sUAS deployments.

1.2. The sUAS and all support equipment, (e.g., spare parts, battery chargers, folding tables and chairs, radio equipment, etc.) will be securely stored and maintained in an appropriate location at the police station for timely portability and deployment. Consideration should be given to the storage and transport of sUAS batteries. The sUAS Sergeant will be responsible for all program equipment and will ensure said equipment is labeled, coded and recorded according to agency policy.

1.3. The sUAS system should be stored in a case(s) that can be easily carried and will protect the contents from excessive loads during transport. The sUAS may be transported via agency ground vehicles, aircraft or other method with supervisory approval.

2. Mission Readiness

2.1. The Chief or designee will approve all public safety missions, training or demonstration flights. All flight operations should be conducted in accordance with the manufacturer's recommendations and the agency policies and procedures. Only personnel, both pilots and crewmembers, who have been trained and certified in the operation of the system, will operate the agency sUA.

2.2. All flights will be properly documented in written or electronic form. The purpose or reason for the flight and name of the approving supervisor will also be documented.

2.3. Whenever there are specific and articulable grounds to believe that sUAS operations may collect evidence of criminal wrongdoing, and if the sUA will intrude upon reasonable expectations of privacy, the agency will secure a search warrant prior to conducting the flight.

2.4. Prior to launch, the sUAS should be programmed to return to the launch point (home) if the Command and Control signal is lost for the specified period of time. In the event of a loss of link with the sUA, lost link procedures should be executed with the immediate landing of the sUAS.

2.5. When the sUAS is deployed to meet an approved mission, it should be recovered within the same general area, if possible.

2.6. A designated safe area of at least 25 feet diameter should be maintained during takeoff and landing evolutions. The flight crew should avoid having others in the safe area during those operations.

2.7. sUAS operations will be conducted during daylight hours unless night operations are approved in the agency's COA or authorized under a waiver for 14 CFR Part 107 operations. If due to exigent circumstances, night operations are necessary and are approved by the Chief or designee, the RPIC should contact the FAA System Operations Support Center (SOSC) to request a Special Government Interest (SGI) approval.

2.8. The RPIC shall make every effort to ensure that flight operations will not pose any undue risk to the personnel directly involved with the mission. The RPIC is the FINAL AUTHORITY concerning the safety and flight of the agency sUAS. The RPIC shall have final determination of risk to the public and authority over any launch of the aircraft. In all cases, the sUAS should not be flown over nonparticipants (with the exception of those nonparticipants who are the subject the mission) and/or property in a manner that is in violation of the FAA regulations and/or the approved COA.

2.9. If, at any time, the RPIC and/or the Observer(s) believe there is a potential for air-to-air conflict, collision, risk of harm/injury to persons or property, the RPIC should abort the flight and immediately land the sUAS. When the hazard has been resolved/mitigated, the flight operation may resume.

2.10. Any sUAS operations expected to be conducted within any controlled airspace, or in close proximity of an airport, should require coordination with the airport operator and/or FAA approval through the provisions of the COA or through coordination with the FAA System Operations Support Center.

2.11. Agency sUAS flight operations should not be flown within unsafe distances to any building, structure, tower or person, except when the risk of a collision and loss of the sUA is outweighed by the need to obtain critical information needed to stop a threat or save a life.

2.12. Weather is a critical issue for safe operations. A local source of weather may be utilized, or the Internet or phone application, or may be observed onsite. The sUA should not be flown outside the approved/authorized weather minimums identified by the manufacturer or the restrictions of 14 CFR part 107, or the agency approved COA by the FAA. The RPIC shall have final determination of risk due to weather and authority over any mission.

2.13 The sUAS is not to drop, carry (other than camera equipment), deliver, tow, or hoist any object, except in the most extreme circumstances where a person's life could be in danger.

2.14. Unauthorized use of agency sUAS could result in disciplinary actions.

3. Maintenance Procedures

3.1. General Maintenance - sUAS team members will learn about various maintenance issues related to the technology and its support equipment (e.g., battery maintenance, battery storage, battery safety, sUA and ground control station software updates and documentation, rotor blade or propeller replacements, etc.) from the manufacturer. They will carry out all scheduled and unscheduled maintenance, servicing and repairs of the sUAS that they are capable of performing, and they shall document all maintenance activities. Agencies should clearly articulate which repairs are field repairs conducted by flight crews, and which repairs require a trained maintenance technician or manufacturer return.

3.2. Batteries - Electric powered sUAS technologies will typically use Lithium ion battery packs. Lithium ion batteries have exhibited several documented risks for fire or explosion if not properly handled, charged and stored. The sUAS batteries should be cycled and stored according to the manufacturer recommendations. These batteries are normally run through a charger on a monthly basis (as recommended by the manufacturer) to ensure reliable function and immediate operability upon deployment. The charging and cycling of batteries should be documented in a sUAS Battery Log. Batteries will be labeled with the date of original receipt, latest charge cycle and a serial number and replaced as/when necessary. The agency should maintain an adequate number of spare batteries to ensure sUAS operability.

4. Mission Callout Requests

4.1. There are generally three types of mission callouts/requests for which the agency may deploy its sUAS: 1) Emergency Responses, 2) Planned Support Missions and 3) Demonstration Flights. All requests for the deployment of the sUAS will coordinate through dispatch and be authorized by the Chief or designee, who will make the determination if deployment of the sUAS team will be appropriate for the mission. A mission should be planned prior to the flight unless the Chief or designee authorizes, due to immediate exigent circumstances, to conduct the flight posthaste. The RPIC will then proceed to set up the mission by reviewing the weather, location, type of incident and personnel to support the mission (VO, camera operator, etc.). The RPIC is responsible for completing the flight log and any other required documents. The RPIC is authorized to evaluate the mission, coordination required, risk factors for the response, and accept or decline any mission request, or portion thereof. The basis for declining a mission should be communicated to requesting personnel. Considerations for authorizing deployment of the sUAS include, but are not limited to, the following:

4.1.1 The location of the mission, for purposes of ensuring the safety of people, officers and property.

4.1.2 The weather and its potential effect on the mission.

4.1.3 Benefits verse risks of the mission.

4.1.4 The takeoff and landing site.

4.1.5 General area in which the sUA is to be flown.

5. Preflight Briefing

5.1. A briefing will be conducted by the RPIC prior to aircraft launch which should include, but not be limited to, the following:

5.1.1. Review of the mission, mission area, mission objectives and any issues of concern.

5.1.2. Review of current and forecasted weather conditions and weather limitations.

5.1.3. Review of operating limitations and safety issues such as battery charge, GPS strength and potential for radio interference.

5.1.4. Review of crew coordination and communications procedures, (flight crew and on scene commander).

5.1.5. Review of emergency/contingency procedures including aircraft system failure, flight termination, divert and lost link procedures.

6. Normal Flight Operations

6.1. Preflight Inspection - A preflight check of the sUAS utilizing an appropriate checklist and GCS preparation protocol will be completed prior to flight and should incorporate the manufacturer's recommendation and applicable Federal Aviation Regulations (FARs). The RPIC shall conduct a preflight crew briefing before every mission to ensure duties, responsibilities, mission objectives,

hazards, weather and any information deemed necessary is clearly conveyed to the sUAS team.

6.2. Communications - All radio communications required by the FAA will be complied with. Communications with sUAS team members and the on scene commander during operations will be limited to operationally necessary communications in order to minimize disruptions or distractions of the RPIC and team members.

6.3. General Procedures:

6.3.1. The sUA should be operated in accordance with manufacturer specifications and applicable FAA limitations and restrictions.

6.3.2. Care shall be taken in the operation of the sUA to avoid overflying persons and property that could result in injury or damage whenever possible.

6.3.3. The lost link response should be set to the home point and the altitude set in accordance with the altitude limit of the COA or as regulated by 14 CFR Part 107, depending on what authority the operation is being flown.

6.3.4. For all operations, the observer shall utilize a distance from the sUAS that will adequately permit them to maintain a visual observation on the sUAS and maintain officer safety.

6.3.5. All sUAS team members should comply with all limitations, restrictions and requirements as enumerated in the COA or as directed by 14 CFR Part 107. The RPIC will function as team leader and the operator of the sUAS. The RPIC is ultimately responsible for the operation and safety of the sUAS mission and is solely responsible for the input of commands/piloting of the sUA during flight.

6.3.7. The RPIC shall be responsible for the system assembly, setup, preflight, operations, post-flight, disassembly, storage and reporting for every mission. Additionally, the designated VO(s) and other personnel as assigned can assist the RPIC in all of these activities.

6.3.8. The RPIC shall be responsible for contacting the FAA in order to publish the applicable Notice to Airmen (NOTAM) prior to the mission if required.

6.3.9. The RPIC shall obtain and record the most up-to-date weather forecast for the area of operation.

6.3.10. All sUAS operations should be conducted at less than 400 feet Above Ground Level (AGL) or within the limitations of an agency COA.

6.3.11. The sUAS should not be operated in sustained winds greater than the manufacturer’s recommendations. The RPIC may decide that wind conditions in the operation area are too hazardous and opt not to fly.

6.3.12. The sUAS crew shall have the capability to monitor local air traffic control radio communications at the takeoff/landing site.

6.4. Takeoff and Landing Zones - The selection of an appropriate launch site demands careful attention to many factors. The selection of a suitable site shall be driven by safety first and foremost.

6.5. Post Flight - A post-flight check of the sUAS will be completed in accordance with the manufacturer's recommendation and applicable FARs utilizing the Post-flight Checklist. The sUAS shall then be prepared for redeployment or for disassembly and storage.

7. Emergency Procedures

7.1. Loss of Flight Control (Lost Link), Return to Home (RTH) - The sUAS lost link procedures should be set to enable the sUA to climb to its programed maximum ceiling altitude and then return to and land at the launch site. An emergency procedures checklist should be developed for each platform operated by the agency. The initial procedure in any loss of link condition is to verify the status of power on the vehicle and GCS, and to adjust the antennas in order to get an optimum line of site to the vehicle. If positive control of the sUAS cannot be re-established and it is leaving the area of operation (Fly Away condition), or the sUA poses a risk to life and/or property, the RPIC will issue an Engine Kill command (if a feature of the sUAS) and should immediately notify the local ATO facility providing the location and circumstances, last know direction of flight and altitude and the registration number.

7.2. Loss of Visual Contact - If visual contact with the sUAS is lost during any mission, the RPIC should command the aircraft into a hover mode and the RPIC and VO shall try to re-establish visual contact. If visual contact cannot be re-established within a reasonable amount of time as determined by the RPIC, then the RPIC shall execute the emergency lost link procedures (RTH) to attempt to reacquire visual contact. If the RPIC and VO are unable to reacquire the sUAS, the flight should be terminated.

7.3. Loss of GPS Signal - Should the sUAS loose the GPS signal during autonomous operations, the RPIC must immediately take manual command of the sUAS and land as soon as practical. If positive control of the sUA cannot be maintained and the sUA is leaving the operation area, or the sUA poses a risk to life and/or property, the RPIC will issue an Engine Kill command. If the sUA is not located, the RPIC should immediately notify the local ATO facility, providing the location and circumstances, last know direction of flight and altitude, and the registration number.

7.4. Loss of Power (Motor Failure)/sUA Forced Landing (Crash) - In case of a motor failure or loss of battery power, the sUAS cannot maintain flight. The RPIC will immediately notify the chain of command, note the location and time of the mishap and then, together with the supporting crewmembers, will attempt to locate and recover the sUA. The RPIC shall assess the impact site for injuries, and render first aid if necessary. The RPIC shall take pictures of the sUA at the impact site, record the location and time. The RPIC will prepare the appropriate notifications to comply with the agency's mishap reporting procedures.

7.5. Alternate (Emergency) Landing Sites - Typically, the primary landing area shall be the same as the launch site. The RPIC has final authority for any approaches to the primary landing site and may wave off any approach deemed unsafe.

7.5.1. The RPIC should designate at least one alternate landing site. In the event that the primary landing site is deemed unsafe, the alternate landing site should be utilized.

7.5.2. The RPIC may optionally designate an "abortive flight site," whereby the aircraft flight may be terminated in an emergency situation. This site should be clear of people and structures as to limit the risk should the

aircraft be required to vacate airspace in an emergency. Should the RPIC deem the necessity of terminating the sUA flight, the sUA may be flown to this site and the flight terminated.

7.5.3. An adequate safety buffer should be established between the sUA takeoff and landing area, and people not specifically involved in the sUA flight operations.

7.6 The RPIC will immediately inform the chain of command, providing all details needed, on any mission or training event that requires the use of emergency procedures or involves an aircraft mishap. In addition, an Officer's Report will be completed detailing the incident, what actions were taken, what caused the situation, and a description of any damage or injuries. This report will be forwarded through the chain of command to the Chief of Police.

8. Videos and Pictures

8.1. With the exception of training and demonstration purposes, all sUA missions will be recorded by the sUA. The recording shall be downloaded and then stored in the department's designed digital evidence management system and marked with the appropriate case number, subject's name and category code. Refer to P3217.6 for a listed of available categories and retention durations.

9. Training

9.1. sUAS team members must possess an Federal Aviation Administration (FAA) Remote Pilot Certification. Additional training will be required at periodic intervals to ensure the continued effective use and operation and proper calibration and performance of the equipment and to incorporate changes, updates, or other revisions in policy and equipment.

9.2. All agency personnel with sUAS responsibilities will be provided training in the local and federal laws and regulations, as well as policies and procedures governing the deployment and use of sUAS.

9.3. Training will be continuous. sUAS Team members will be required to complete eight (8) hours of sUAS training each month. A lesson plan will be prepared prior to each training event. The lesson plan must be reviewed and approved by the Chief or designee prior to the scheduled training. All lesson plans and training records will be submitted and maintained by the training unit.

9.4. Periodically the sUAS Sergeant will schedule joint sUAS training with other law enforcement agencies.

9.5. UAS Team members will be knowledgeable of current FAA regulations regarding sUAS operations for public safety, commercial usage and hobby usage of sUAS's.

BY ORDER OF

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CHIEF OF POLICE