	Abilene Police Department Operating Procedures		
	Subject: <i>Small Unmanned Aerial System</i>	Issued: 03/15/2022	Number: D-33

Purpose and Philosophy

The Abilene Police Department may deploy small unmanned aircraft in support of public safety and policing operations. Such operations are conducted by qualified personnel in accordance with applicable flight regulations and this procedure. This policy sets forth how the sUAS program will operate in coordination with law enforcement officers conducting a specific mission as guided by the Certificate of Authorization (COA) issued by the Federal Aviation Administration (FAA). This policy is designed to minimize risk to people, property, and aircraft during the operation of the sUAS while continuing to safeguard the right to privacy of all persons.

Definitions

sUAS Program Manager (UAUC) – The individual responsible for reviewing and approving the use of the sUAS in a law enforcement mission. The UAUC has full oversight responsibility of all logistical and administrative elements of the sUAS operations.


Team Leader (TL) – The individual responsible for assisting the UAUC with administrative functions related to the sUAS program, including maintaining a current list of all equipment that could be placed on the sUAS during operations. The Team Leader is also responsible for oversight of condition and maintenance of the sUAS.

Designated Pilot (DP) – A member of the Unmanned Aviation Unit that has received the required departmental training regarding safe piloting of the sUAS.

Pilot in Command (PIC) – The individual responsible for the overall flight operations of a specific mission.

Designated Observer (DO) – The individual trained to maintain the line-of-sight and 360-degree hazard awareness around the sUAS at all times and assist the PIC in carrying out all duties required for the safe operation of the sUAS.

Defined Incident Perimeter – a location identified via a Very High Frequency Omnidirectional Range (VOR) Radial/distance fix or GPS Latitudinal/Longitudinal Coordinates. The location has a defined radial perimeter to be determined based on the scope of the operation and a defined operational ceiling at or below 400 feet Above Ground Level (AGL).

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Flight Briefing – a discussion led by the PIC prior to aircraft launch, which shall include but not be limited to:

- A. Review of mission goals and methods to achieve goals, including handoff procedures.
- B. Review of current and forecasted weather conditions and weather limitations on mission.
- C. Review of current Notice to Airmen (NOTAMs) and Temporary Flight Restrictions (TFRs) that have been issued for the proposed flight area.
- D. Identification of mission limitations and safety issues such as battery charge, GPS strength, and potential for radio interference.
- E. Review of proposed flight area, including maximum ceiling and floor.
- F. Review of communication procedures between PIC and Observer, and other ground support personnel, including the availability of cell phones to communicate with Air Traffic Control in the event of a flyaway or other flight emergency.
- G. Review of emergency/contingency procedures including aircraft system failure, flight termination, divert and lost link procedures.
- H. Review of required video or digital images.
- I. Contents of the COA.
- J. Frequencies to be used.
- K. Execution of a pre-flight check following the approved checklist.

Digital Multimedia Evidence (MDE) – Digital recordings of images, sounds and associated data.


Small Unmanned Aircraft System (sUAS) – UAS aircraft weighing less than fifty-five (55) pounds and are flown consistent with Federal Aviation Administration (FAA) regulations governing such aircraft.

Pilot and Designated Observer Training Requirements

Pilots are certified after completing a sixteen (16) hour course covering all aspects of sUAS operations. Pilots are required to complete at least four (4) hours of training per month and demonstrate proficiency in the safe flight of sUAS platforms. Pilots must complete at least three (3) missions every 90 days to remain certified.

Designated Observers must complete a one (1) hour course covering the basic operations, regulations, capabilities and limitations of the sUAS platforms used by the Abilene Police Department annually. The course covers see-and-avoid, VLOS and night time operation requirements. The training covers the ability to recognize and overcome visual illusions caused by darkness and physiological conditions that degrade vision.

Designated Pilots and Observers must meet the requirements set forth by the Abilene Police Department for full duty status before participating in a sUAS operation.

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Aircraft

General Worthiness – The TL shall be responsible for ensuring that the sUAS is maintained and flight ready according to the manufacturer’s recommendations and related industry standards. In addition, the TL may rely upon the testing date and evaluation data provided by other government agencies, the aircraft manufacturer, and independent testing facilities.


Mission Specific Airworthiness – The PIC shall be responsible for ensuring that the sUAS is airworthy prior to each mission. The PIC may rely upon the inspection and reports provided by other agency personnel appointed with the responsibility for maintaining the sUAS.

Maintenance – The TL is responsible for maintenance of the sUAS, which shall be performed by DP’s specifically trained on the maintenance of the sUAS or by manufacture certified representatives and personnel. The PIC assisted by the DO shall perform a pre-flight and post-flight inspection of the sUAS. Any equipment issues shall be reported to the UAUC. It shall be the responsibility of the UAUC in consultation with the TL to determine whether the reported issues need to be corrected prior to the next flight, which will then be documented in the aircrafts log.

Software and hardware changes - All changes shall be documented in the unmanned aircraft and ground control station logbooks by persons authorized to conduct UAS maintenance. Test flights must be conducted and documented after major changes in the hardware or software.

Storage Transport - The aircraft shall be stored in a secure manner to limit possible damage to the unit while in transit. Batteries must be transported in an appropriate container to prevent possible damage to the batteries. Batteries should not be dropped or punctured.

Battery Charge - To the extent permissible by manufacturer’s recommendations, the sUAS shall be fully charged when not in use. The Lithium-ion Polymer (LiPO) batteries should be charged and stored in a cool and dry location. Because of the fire hazard risk, batteries should not be left unattended when charging at full or rapid charge (vs. trickle charging) and should be charged at the recommended amperage and not exceeded. If the LiPO batteries begin smoking or expanding (puffing) they should immediately be isolated for risk of explosion or fire. Never completely discharge LiPO batteries or they will become un-useable (i.e. unable to hold a charge).

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Pilots in Command

Pilot Certification, Currency, and Training - PICs must have completed the required departmental basic flight training regarding sUAS Operations. This training shall include but is not limited to topics on: sUAS Flight Characteristics, Weather Analysis, the National Airspace System, ATC Coordination, Maintenance of the sUAS, Takeoff and Landing Procedures, Emergency Procedures, Lost Link Procedures, and APD sUAS Policies and Procedures. In order to qualify as a current PIC, the pilot must have completed three takeoffs and landing within the previous ninety (90) calendar days. Members who do not have documented training or flight time for the preceding 90 days shall demonstrate proficiency before performing pilot/observer duties during a mission.

Initial Training - All PICs who will be flying law enforcement missions shall be properly trained by the Department. The sUAS pilots will meet all operational conditions of the (COA) issued by the FAA. The PICs will have a current working knowledge of the airspace intended for operations, Air Traffic Control communication requirements, specific sUAS aerodynamic factors, and the ability to obtain and interpret weather.

Mission Training – All pilots must undergo routine scenario based mission training to increase specific core competencies in all sUAS operations. This training is in addition to Basic Flight Training.


- A. In order to accomplish required currency training, pilots shall participate in 4 hours of monthly training, at a minimum, as assigned.
- B. Recurrent training is not limited to actual pilot/observer skills, but included knowledge of all pertinent sUAS and aviation matters.
- C. All members within the UAU unit shall read the current COA and maintain proficiency in their operator/observer abilities.
- D. Failure to maintain/prove proficiency can result in removal from sUAS operations.

In-service training – Each pilot must undergo 8 hours of in-service training every 12 months to include updated industry standards and field exercises, as well as a review of current case law governing the use of aviation assets as designated by the UAUC.

Designated Observers – An observer is required for all practice and mission flights of the sUAS.

Note: The UAUC, TL, or DP may serve as an observer.

- A. Initial Training- sUAS observers shall meet all conditions of the most recent COA issued by the FAA. Observers will have a current working knowledge of the airspace intended for operations.
- B. The observer will receive specific training on relevant Part 91 regulations, such as the obligation to see and avoid other aircraft and the ability to identify position for purposes of relaying position reports to the PIC.

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Pre-flight Briefing – Observers must participate in the pre-flight briefing.

Flight Conditions

Line-of-sight - All sUAS operations shall be conducted within line-of-sight of the PIC or Observer such that the Pilot or Observer may detect and avoid hazards such as aircraft and property.

Altitude - All flights shall be conducted at less than 400 feet Above Ground Level (AGL), unless otherwise approved by FAA in an Emergency COA. All flights will be conducted under VFR (Visual Flight Rules).

Weather - The PIC is responsible for obtaining current weather reports from an appropriate source. This can include calling the closest airport with Automated Weather Observation Systems (AWOS) or Automated Terminal Information System (ATIS), or utilizing any aviation application that qualifies as an EFB (Electronic Flight Bag) Flight operations are not authorized in known icing conditions as defined in 14 CFR 91.


Operating Guidelines

Heat - The operational guidelines for heat are less than 105 degrees Fahrenheit (at ground level. Operation in temperatures over this mark should be avoided except in extreme circumstances.

Cold - The operational guidelines for cold are greater than 31 degrees Fahrenheit at ground level. Operation in temperatures under this mark should be should be avoided except in extreme circumstances. Conditions where a wind chill temperature exists below 33 degrees should also be avoided.

Wind - The sUAS will not be operated in sustained winds greater than 25 knots (29 mph). Wind velocity can be obtained from the nearest METAR. General weather information can be obtained from the ATIS , ASOS, or AWOS. The PIC may decide that wind conditions at the area of operation are too hazardous and opt to not fly.

Rain, Snow and Fog - The operational guidelines for these conditions are based upon visibility and operator safety at the local site. The PIC and Observer must adhere to the line-of-sight and VFR weather minimum requirements.

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Flight Requirements

Mission Requests - All requests for sUAS to provide support for a mission shall be made to an on duty DP, the TL, or the UAUC. Considerations for use of sUAS shall include the following:


- A. The location of the mission, for purposes of insuring the safety of people and property.
- B. The intended area of operation, for purposes of evaluating the ability to mitigate potential air-to-air conflicts. Such evaluation will consider the current landing patterns at airports/helipads in the vicinity. Whenever the approach path of an aircraft to a nearby airport/helipad would involve flying over the intended operation, such operations shall be coordinated with the appropriate air-traffic control facility. All coordination will be done in accordance with any requirements in the police department's COA issued by the FAA.
- C. The weather and its potential effect on the aircraft, including the potential to carry the aircraft to an area of air-to-air conflict.
- D. The currency of the PIC and Observer.
- E. The potential usefulness of the information gathered by the sUAS versus information gathered through other means.
- F. Any other relevant risk factors to successfully complete a risk benefit analysis for the use of sUAS in the specific mission. Risk factors may include but are not limited to tree canopy, distance between buildings, smoke, etc.
- G. Strength of radio and GPS signal as indicated on the sUAS.

Pre-flight Preparation - Before any mission, the PIC must conduct a Pre-Flight Briefing.

Scene Review - The PIC and DO are responsible for identifying any unsafe conditions at the scene. This includes, but is not limited to:

- A. Take-off and landing site - This area should be free of obstructions, items on the ground and debris that may interfere with the rotors. This includes creation of a launch site perimeter, clearly marked or manned to enable other law enforcement officers and civilians to remain clear.
- B. Safety View - The PIC and DO should identify trees, bushes, power lines, and other potential obstructions and coordinate the pre-flight briefing accordingly.
- C. Interference - The PIC and DO should identify Cell Towers, TV and Microwave sources, which might create interference with the flight equipment. The equipment should be tested on the ground to insure proper communications and operation before the flight.

Notice to Airmen (NOTAM) - A distance (D) NOTAM shall be issued for all sUAS training and mission operations through the local NOTAM issuing authority through the nearest Flight Service Station (FSS). The NOTAM Flight Service Station shall be contacted not more than 72 hours in advance, but not less than 24 hours in advance for sUAS operations.

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Due to the immediacy of some emergency operations, it is understood by the Federal Aviation Administration that this NOTAM notification may be issued as soon as practical before flight. If issuance of a (D) NOTAM may endanger the safety of persons on the ground, it may be excluded.

ATC Notification – Although not required by the COA, the PIC should ~~shall~~ notify Abilene Air Traffic Control at least 30 minutes prior to emergency operations in addition to the NOTAM requirements, when practical. Such notification should include the following:

- A. The intended location, time and duration of the flight.
- B. The maximum altitude of the flight.
- C. NOTAM number.
- D. A cell phone number of an individual for emergency contact.

Documentation - A copy of the current COA must be kept with the sUAS at all times.

Flight operations.

- A. All flight operations shall be conducted in accordance with the manufacturer's recommendations.
- B. The sUAS must operate with position/navigation or anti-collision lights on at all times.
- C. If at any time the PIC and/or Observer believe there is a potential for air- to-air conflict, risk of harm to individuals or property, the PIC shall immediately land the aircraft.
- D. In the event of lost communications with the aircraft, lost link procedures shall be executed including immediate landing of the aircraft. If the aircraft does not immediately execute these orders, the PIC shall notify the appropriate ATC. If the PIC loses visual contact, ATC shall be immediately notified


Emergency Exceptions - An application for an Emergency COA must have prior approval from the UAUC or TL before being submitted to the FAA.

Approved Deployment Scenarios

Situational Awareness - To assist decision makers e.g., incident command staff; first responders; city, county, and state officials in understanding the nature, scale, and scope of an incident, and to assist in planning and coordinating an effective response.

Search and Rescue - To assist missing person investigations, Amber Alerts, Silver Alerts, and other search and rescue missions.

Tactical Deployment - To support the tactical deployment of officers and equipment in emergency situations e.g., incidents involving hostages and barricades, support for large-scale tactical operations, and other temporary perimeter security situations.

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Visual Perspective - To provide an aerial visual perspective to assist officers in providing direction for crowd control, traffic incident management, special circumstances, and temporary perimeter security.

Scene Documentation - To document a crime scene, accident scene, or other major incident scene e.g., disaster management, incident response, large-scale forensic scene investigation.

Tracking - Aiding in the location of a suspect, witness, or others.

Patrol Extension - Aiding patrol officers in special operations.

Warrant Service - Assisting officers engaging in warrant service officers for pre-event site analysis, and during operations as an aid to officer safety and suspect recovery.

Prohibited Acts

Warrantless Search - The sUAS shall not be operated in violation of the Texas or United States constitutions, statutes, or regulations. When a search warrant is required by law and no warrant exception exists, flight is prohibited unless a search warrant signed by an authorized magistrate is obtained.


Routine Patrol - sUAS shall not be used for routine patrol duties.

Exceeding Aircraft Limitations - The sUAS shall not be flown in conditions that exceed the manufacturer’s recommended limitations, including range, ceiling, wind strength, and battery charge.

High Risk Missions - The sUAS shall not be flown for any mission in which the UAUC, TL, or the PIC determines the risk of flying the sUAS outweighs the benefit to the mission. Risks may include hazards to individuals or property on the ground, possible collision hazard with other aircraft, loss of control of the sUAS. The UAUC cannot countermand a PIC’s determination to not fly a mission. However, the UAUC can countermand a PIC’s determination to fly a mission. The PIC has sole accountability for the sUAS during flight operations.

Spraying and Dropping - The PIC is prohibited from spraying or dropping anything from the aircraft and carrying hazardous materials.

Prohibited Airspace - sUAS flights are prohibited in specific areas of Dyess AFB unless specifically authorized by Dyess AFB Air Traffic Control:

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Defined Incident Perimeter - Unless authorized by the UAUC only one sUAS shall be operated in a defined incident perimeter, by a single control station, and by one pilot at a time.

Daisy-chaining Observers - Daisy-chaining Observers to extend line-of-sight is prohibited.

Manned Aircraft in Operating Area - sUAS flights are prohibited when other manned aircraft are operating within the defined incident perimeter.

Flying for Compensation - As a "public aircraft," flying for compensation or hire is prohibited. Cost reimbursement between government units is permitted.

Documentation and Reporting

Flight Documentation - The PIC or their designee shall complete all department flight documentation including pertinent information about the aircraft, flight conditions, type of mission, and mission parameters. Monthly reports containing the above information or indicating no flights occurred during the month shall be submitted to the FAA by the UAUC.

Incident and Crash Documentation - The UAUC shall be responsible for reporting any incidents or crashes to the FAA through the COA online system and supplying any additional documentation that may be required.

DME Retention & Management

All DME shall be handled in accordance with existing policy on data and records retention.

All DME shall be securely downloaded at the completion of each mission.


Employees shall not edit, alter, erase, duplicate, copy, share, or otherwise distribute in any manner sUAS DME without prior written authorization from the Chief of Police or their designee.

Access to sUAS DME and reports is controlled in the same manner as any other video recordings or evidence, and is periodically audited to ensure that only authorized users access the data for authorized purposes.

DME shall be securely stored in accordance with the Abilene Police Department's policy and state records retention laws.

Video and/or Photographs

In-Flight Video – the sUAS is not required to activate the onboard recorded video during training missions, or any mission designated by the sUAS Program Manager or sUAS TL where recorded video is not integral to the mission of the sUAS.

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Evidence Procedures

- A. Any video evidence obtained during flight shall be stored in accordance with evidence collection policies and procedures.
- B. Any video deemed non-evidentiary shall be deleted with approval of the sUAS Program Manager.
- C. The PIC is responsible for downloading the in-flight video to the designated City computer server.
- D. The PIC is responsible for notifying the lead investigator for the mission in which the sUAS operated that in-flight video evidence is available for their case.
- E. The lead investigator shall facilitate recovery of the in-flight video and submission as evidence within their case.

Retention – the in-flight video recordings shall be retained in accordance with the Department’s retention policy.

Open Records Requests – In-flight video recordings shall be considered subject to open records requests as any other police document. Recordings shall not be released without approval of the City/ Assistant City Attorney assigned to review the open records request.

UAS Use of Force

Small Unmanned Aerial Systems may not be used as weapon. In an extreme case where the survival of officers or civilians is in severe jeopardy and deadly force is authorized, the use of force for a sUAS system would fall under **Operating Procedures D-4 ,Weapons of Last Resort.**