


	<i>FIRE RESCUE</i> ALBEMARLE COUNTY STANDARD OPERATING GUIDELINE	
	Subject:	Small Unmanned Aircraft System Unit
	Reference Number:	SOG-DEP-004
	Effective Date:	June 18, 2018
	Last Revision Date:	
	Signature of Approval:	 J. Dan Eggleston, Chief

PURPOSE: The Albemarle County Fire Rescue Department’s sUAS unit’s purpose is to improve emergency preparedness and assist in emergency response disaster recovery. The use of the sUAS is not intended for general observation of areas where there is a reasonable expectation of privacy. All use of the Department’s sUAS must be in compliance with Virginia Code § 19.2-60.1 (C) and Virginia Code § 19.2-60.1 (D)

SCOPE: Applies to those operating and managing the small Unmanned Aircraft System (sUAS), as well as those career and volunteer personnel who seek assistance from the program.

DEFINITIONS:

sUAS (Small Unmanned Aerial System) The aircraft, all associated control stations, and support equipment required for operations.

UAV (Unmanned Aerial Vehicle) The aircraft and all attached payloads.

PIC (Pilot-in-command) Responsible for flying the UAV and is responsible for all operational decisions for the flight.

VO (Visual observer) Responsible for assisting the PIC and maintaining situational awareness of the operational area and airspace.

ATC (Air Traffic Control)

CT (Control Tower) Direct communication with ATC

CTAF (Common Traffic Advisory Frequency) 123.0 C

UNICOM (Universal Communications)

PROCEDURE:**I. UNIT ORGANIZATIONAL STRUCTURE:**

- a. The sUAS program will be managed out of the Albemarle County Fire Marshal's Office.
 - i. Any ACFR personnel are eligible to participate in the program based on program needs.
 - ii. A chief pilot will be appointed by the County Fire Rescue Chief or designee.

- b. The chief pilot will ensure policies and procedures conform to current laws, regulations and best practices, along with the following additional responsibilities:
 - i. Develop/manage the flight training program that all prospective sUAS pilots must successfully complete to be considered authorized sUAS operators.
 - ii. Ensure all authorized pilots have completed all required department approved training in the operation, applicable laws, policies and procedures regarding use of sUAS.
 - iii. Ensure all authorized pilots meet flight currency requirements to remain flight qualified.
 - iv. Develop/manage standard operating guidelines (SOG's) specific to sUAS operations as necessary/required.
 - v. Develop/manage the protocol for deploying a sUAS, including urgent requests made during ongoing or emerging incidents by other agencies.
 - vi. Develop/manage an operational protocol governing the deployment and operation of a sUAS including, but not limited to, safety oversight, use of visual observers, establishment of lost link procedures, and secure communication with air traffic control facilities.
 - vii. Ensure all training and operational missions are documented according to established protocol; establish/manage such protocol.
 - viii. Develop/manage a sUAS inspection, maintenance and record-keeping protocol to ensure continuing airworthiness of a sUAS, up to and including its overhaul or life limits.
 - ix. Develop/manage protocols to ensure all data intended to be used as evidence is accessed, maintained, stored, retrieved, retained and purged in a manner ensuring its integrity as evidence, including strict adherence to chain of custody requirements.
 - x. Facilitate law enforcement access to images and data captured by the sUAS.
 - xi. Recommend program enhancements, particularly regarding safety and information security.
 - xii. Ensure established protocols are followed by monitoring and providing periodic reports on the program to the Albemarle County Fire Rescue Chief.

II. GENERAL OPERATIONAL REQUIREMENTS:

a. OPERATIONAL USE:

- i. The sUAS is to be maintained in an airworthy condition, and flight ready, according to the manufacturer's recommendations and related industry standards.
- ii. Prior to any mission, authorized pilots will inspect the sUAS to ensure it is airworthy.
- iii. Pilots are only authorized to operate a specific sUAS that they have been approved to operate.
- iv. Only authorized pilots shall be permitted to operate the sUAS. Prior to any flight, the pilot-in-command (PIC) shall perform a pre-flight check following the approved checklist. It is recommended additional personnel be at the location of the pilot to offer any assistance, as well as ensuring scene safety during deployment. The additional personnel are not required to be authorized pilots, but it is recommended that the personnel are trained as visual observers.
- v. The PIC will notify ECC of the location that the UAV is going to be deployed from, and the area where operations will be conducted, prior to deployment for emergency incidents.
- vi. , The PIC will file a Notice to Airmen, (NOTAM) with information regarding a Department sanctioned scheduled flight outside of training parameters.
- vii. The PIC must be able to establish visual line-of-sight on the sUAS at all times, and will not operate directly over any persons or moving vehicles not involved in the mission, incident, or event unless allowed under FAA waiver. The PIC must yield right-of-way to other manned or unmanned aircraft and no pilot will operate the sUAS in a careless or reckless manner.
- viii. In the event any manned aviation unit arrives on scene, the PIC will immediately notify the incoming aircraft via CT, CTAF, or UNICOM of the UAV position and altitude, establish a safe altitude level as to not interfere with the manned aircraft, and safely recover the UAV.
- ix. The PIC shall not operate a UAV at an altitude higher than 400ft above ground level (AGL), or 400ft above a structure within a radius of 400ft relative to UAV's position, unless approved by an FAA waiver.
- x. sUAS operations may be conducted during hours of darkness after the end of civil twilight with an appropriate FAA waiver, required lighting equipment, and a department night qualified pilot as the PIC.
- xi. Authorized operators must be familiar with emergency contingency procedures including sUAS system failure, flight termination, diversion, and lost link procedures.

- xii. The PIC may operate in class B, C, D, and E airspace with prior FAA air traffic control authorization, or established FAA airspace authorization.
- xiii. The PIC will complete the post flight inspection and flight logs after each flight.
- xiv. If the PIC detects any issue that affects the airworthiness of the UAV, they will immediately tag the UAV as unairworthy, complete a maintenance request and forward it to the chief pilot.
- xv. In the event of an UAV crash or accident, the PIC shall complete a UAV accident report and forward it to the chief pilot and Albemarle County Fire Rescue Chief.
- xvi. The PIC will follow all applicable 14 CFR Part 107 regulations at all times, unless a waiver has been issued by the FAA to operate outside of these regulations.
- xvii. Deployment of a sUAS shall require notification to the Incident Commander or the On-duty Albemarle County Battalion Chief, depending on the type of mission.

III. AUTHORIZED DATA CAPTURING USES:

- a. The sUAS video surveillance equipment shall only be used:
 - i. To assist in Fire suppression activities.
 - ii. To conduct search and rescue operations.
 - iii. To aid or assist in other life safety operations.
 - iv. For Department approved training missions.
 - v. To conduct land surveys, and mapping functions.
 - vi. To collect evidence with a signed search warrant for investigations.

IV. PROHIBITED USES GENERAL:

- a. The sUAS **shall not** be used:
 - i. When other manned aircraft are operating in the immediate area.
 - ii. In contradiction to the manufacturer's specifications or instructions.
 - iii. In any way that would violate the Constitutional Rights of any citizen, or in violation of state statute regarding law enforcement use of a sUAS.
 - iv. In situations where there may be an increased risk of injury to others in the operational area.
 - v. To conduct personal business of any type.

V. DOCUMENTATION AND RETENTION OF sUAS DATA:

- a. Flight documentation- The PIC will complete all department flight documentation, including pertinent information about the aircraft, flight conditions, type of mission, mission parameters, and results. Monthly reports containing the above information or indication of no flights occurring during the month, will be submitted to the chief pilot.

- b. Digital media (still images/video) captured by the sUAS will be retained by the Department according to the classification of the incident's retention schedule set by the State of Virginia.
- c. Electronic trails, including encryption, authenticity certificates and date and time stamping, shall be used as appropriate to preserve individual rights and to ensure the authentic and maintenance of a secure evidentiary chain of custody.

VI. PRIVACY:

- a. The use of the sUAS potentially involves privacy considerations. Absent a warrant, or exigent circumstances, operators and observers shall not intentionally record or transmit images of any location where a person would have a reasonable expectation of privacy (e.g., residence, yard, enclosures).
- b. All operations will respect the Constitutional Rights and state statute requirements of citizens, at all times.

ATTACHMENTS:

Reports and Log Samples Attached as examples – official department reports and logs may not be exactly the same

- “Appendix A”, Training Log
- “Appendix B”, Operational Flight Log
- “Appendix C”, Maintenance Report
- “Appendix D”, UAS accident report

Attachment A

ACFR sUAS Training Log

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ACFR sUAS Training Log

PILOT AUTHORIZATION RECORD:

Solo flight authorizations:

Date: _____ Instructor: _____

Visibility: _____

Maximum distance: _____ Maximum altitude: _____

Additional restrictions: _____

Date: _____ Instructor: _____

Visibility: _____

Maximum distance: _____ Maximum altitude: _____

Additional restrictions: _____

Date: _____ Instructor: _____

Visibility: _____

Maximum distance: _____ Maximum altitude: _____

Additional restrictions: _____

Date: _____ Instructor: _____

Visibility: _____

Maximum distance: _____ Maximum altitude: _____

Additional restrictions: _____

Attachment B

ACFR sUAS Operational Flight Log

Attachment C

ACFR sUAS Maintenance Log

ACFR sUAS MAINTENANCE REPORT:

Date/Time: _____ Location: _____

UAS: _____ UAV Registration #: _____

Total UAV hours: _____ Maintenance tech.: _____

Person reporting/requesting maintenance: _____

UAS airworthiness: In-service ___ Out-of-service ___

Maintenance type: Scheduled ___ Unscheduled ___ Repair ___ Crash ___

Components involved: _____

Components replaced/repaired: _____

Additional comments: _____

UAS returned to service: Yes ___ No ___ Date: _____

Signature: _____ Requestor of maintenance

Signature: _____ Maintenance tech

Signature: _____ Maintenance officer-in-charge

Attachment D

ACFR sUAS Crash Report

ACFR sUAS CRASH REPORT:

Date/Time: _____ Location: _____

UAS: _____ UAV Registration #: _____

Pilot-in-command: _____

Person manipulating controls: _____

Visual observer/s: _____

Total mission flight time: _____ Total UAV hours at time of crash: _____

UAS in-service: Yes ___ No ___

Description of crash: _____

Damage sustained to UAS: _____

Estimated cost to repair/replace: \$ _____

Crash investigated by: _____ Date: _____

Cause of crash determination: Yes ___ No ___

Crash investigator comments: _____

Signature: _____ Pilot-in-command

Signature: _____ Crash investigator

Signature: _____ Chief Pilot