

Los Angeles County Sheriff's Department

Audit and Accountability Bureau



Alex Villanueva, Sheriff

Unmanned Aircraft System Audit

Countywide Operations -
Special Operations

Division Audit No. 2019-1-A

May 15, 2019

LOS ANGELES COUNTY SHERIFF'S DEPARTMENT
Audit and Accountability Bureau

UNMANNED AIRCRAFT SYSTEM AUDIT
Project No. 2019-1-A
AUDIT REPORT

PURPOSE

The Audit and Accountability Bureau (AAB) conducted the Unmanned Aircraft System (UAS) Audit under the authority of the Sheriff of Los Angeles County. The audit was performed to determine how the Los Angeles County Sheriff's Department (Department) adhered to Departmental policies and procedures related to the deployment of the Department's UAS.

The AAB conducted this audit under the guidance of Generally Accepted Government Auditing Standards.¹ The AAB determined the evidence obtained was sufficient and appropriate to provide reasonable assurance based on the audit results.

BACKGROUND

The Los Angeles County Board of Supervisors (BOS) requested a report from the Office of Inspector General (OIG) regarding the Department's planned usage of the UAS.² The BOS concurrently requested a report from the Civilian Oversight Commission (COC) to review and supplement the OIG report, and provide recommendations, as appropriate.³ On September 28, 2017, the COC presented its report and recommendations to the BOS. A copy of the report was provided to the Department.⁴

Ten recommendations were presented by the COC, and the Department agreed to implement all ten. Recommendation number seven states that the UAS program should be audited once every year. This audit implements this recommendation for years 2017 and 2018. The other recommendations and their status are outlined in the Additional Information section of this report.

PRIOR AUDITS

This is the first UAS audit conducted by the AAB.

¹ United States Government Accountability Office, Government Auditing Standards, December 2011.

² By unanimous approval of item 17, under Consent Calendar, Los Angeles County Board of Supervisors meeting January 24, 2017.

³ Los Angeles County Sheriff's Department Unmanned Aircraft System Evaluation, Office of Inspector General, County of Los Angeles, April 2017.

⁴ Revised Report of the Sheriff Civilian Oversight Commission Regarding the Unmanned Aircraft System Program of the Los Angeles County Sheriff's Department, September 2017.

UNMANNED AIRCRAFT SYSTEM AUDIT

Project No. 2019-1-A

METHODOLOGY

Scope

The Department's Special Enforcement Bureau (SEB) is the only bureau within the Department allowed to have a UAS program or deploy a UAS. The audit consisted of four main objectives listed below regarding the deployment of the Department's UAS. The applicable sections from the Department's Manual of Policy and Procedures (MPP), SEB Unit Orders, and the Department's Certificate of Authorization (COA) filed with the Federal Aviation Administration (FAA) were used as criteria for the audit.⁵

- Objective No. 1 – Authorized UAS Deployment
- Objective No. 2 – UAS Deployment Requirements per Department and Unit Policies and FAA COA
- Objective No. 3 – Compliance with 2017 FAA COA Requirements
- Objective No. 4 – Compliance with 2018 FAA COA Requirements

The audit included an evaluation of UAS deployment documents, required FAA Notice to Airmen (NOTAM) records, training records, and pilot certifications.⁶ Auditors also conducted an in-person visual inspection of the unmanned aircraft (UA) and its docking station and control tablets.

Audit Time Period

The audit time period was from January 1, 2017, through December 31, 2018.

Audit Population

The audit population consisted of 100% of all UAS deployments for the years 2017 and 2018. There were six UAS deployments in 2017, and three UAS deployments in 2018. A total of nine UAS deployments were reviewed for the audit time period.

⁵ "COA is an authorization issued by the Air Traffic Organization (the operational arm of the FAA) to a public operator for a specific UA activity...(the) FAA conducts a comprehensive operational and technical review." Certificates of Waiver or Authorization (COA), Retrieved March 2019 from:

https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/aaim/organizations/uas/coa/

⁶ "A Notice To Airmen or NOTAM is a notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition, or change in any component (facility, service, or procedure of, or hazard in the National Airspace System) the timely knowledge of which is essential to personnel concerned with flight operations." "FAI FSS - NOTAM Overview" Retrieved March 2019 from:

https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/systemops/fs/alaskan/alaska/fai/notam/n tm_overview/

UNMANNED AIRCRAFT SYSTEM AUDIT
Project No. 2019-1-A

AUDIT OBJECTIVES AND RESULTS

Objective No. 1- Authorized UAS Deployment

Criteria

Manual of Policy and Procedures, Section 5-09/570.00, *Unmanned Aircraft System* (July 2018), states:

Authorized UAS operations are limited to emergency and life threatening situations, such as search and rescue missions, explosive ordinance detection missions, disaster response, barricaded suspects, hostage situations, active shooters, hazardous materials incidents, fire related incidents, and other high-risk tactical operations. A UAS shall not be used for non-emergent surveillance missions or missions that would violate the privacy rights of the public.

Note: Auditors noted this section had been updated in July 2018. The amended policy did not alter the way the data was analyzed.

Manual of Policy and Procedures, Section 5-09/570.10, *Unmanned Aircraft System Procedures* (July 2018), states:

All requests for the use of the unmanned aircraft system (UAS) shall be evaluated and authorized or denied by the Special Enforcement Bureau (SEB) team commander.⁷

Note: Auditors noted this section had been updated in July 2018. The amended policy did not alter the way the data was analyzed.

Special Enforcement Bureau Unit Order 2017-01, *Utilization of Unmanned Aircraft System (UAS) Platform* (January 2017), states:

...In these situations of extreme threat the deployment of an SEB Unmanned Aircraft System (UAS) may be authorized. Authorized missions are search and rescue missions, explosive ordinance detection missions, disaster response, barricaded suspects, hostage situations and other high risk tactical operations, hazardous materials incidents, and fire related incidents. ... All Requests for use of the UAS will be evaluated and authorized or denied by a SEB Team Commander prior to deployment.

⁷ A SEB Team Commander holds the rank of lieutenant.

UNMANNED AIRCRAFT SYSTEM AUDIT
Project No. 2019-1-A

Procedures

Auditors examined UAS documentation for all nine UAS deployments to determine if the deployment was for an approved mission type.

Results

All nine (100%) deployments met the criteria.

This space intentionally left blank.

UNMANNED AIRCRAFT SYSTEM AUDIT
Project No. 2019-1-A

Objective No. 2 – UAS Deployment Requirements per Department and Unit Policies and FAA COA

Criteria

Manual of Policy and Procedures, Section 5-09/570.00, *Unmanned Aircraft System* (July 2018), states:

... SEB shall maintain a cadre of individuals certified by the FAA to operate an UAS. ... An UAS operation requires a two-person team of SEB personnel consisting of a qualified operator and an observer.

Note: Auditors noted this section had been updated in July 2018. The amended policy did not alter the way the data was analyzed.

Manual of Policy and Procedures, Section 5-09/570.10, *Unmanned Aircraft System Procedures* (July 2018), states:

UAS operators are responsible for making a Public Notice to Airmen (NOTAM) and all required FAA notifications prior to operating an UAS. ... An SEB team commander shall be responsible for notifying and coordinating with the Aero Bureau watch commander, rank of sergeant or above, prior to any UAS operations.

Note: Auditors noted this section had been updated in July 2018. The amended policy did not alter the way the data was analyzed.

Special Enforcement Bureau Unit Order 2017-01, *Utilization of Unmanned Aircraft System (UAS) Platform* (January 2017), states:

- 1. SEB will maintain a cadre of individuals certified by the Federal Aviation Administration (FAA) regulations to operate a UAS.*
- 3. The minimum personnel required on ALL UAS missions will be a two person team consisting of a qualified operator and observer.*
- 7. The SEB UAS operator is responsible for making a public notice to airman and all required FAA notifications prior to operating an SEB UAS.*
- 8. An SEB Team Commander is responsible for notifying and coordinating with the Aero Bureau watch commander, rank of sergeant or above, prior to any SEB UAS operations.*

Note: Auditors only used the portions of the above unit order specific to UAS deployment for this objective.

UNMANNED AIRCRAFT SYSTEM AUDIT

Project No. 2019-1-A

Federal Aviation Administration, Certificates of Authorization 2016-WSA-178-COA (September 2016), states:

The UA must be operated within visual line of sight (VLOS) of the Pilot in Command (PIC) and or the visual observer (VO) at all times. ... UAS operations must remain within this “defined incident perimeter” controlled by law enforcement at or below 400 feet Above Ground Level (AGL).⁹

Federal Aviation Administration, Certificates of Authorization 2017-WSA-022-COA (April 2018), states:

The UA must be operated within visual line of sight (VLOS) of the Pilot in Command (PIC) and the person manipulating the flight controls at all times unless otherwise specified in a Special Provision. ... The defined maximum altitude for UAS operations is 400 feet AGL. Air Traffic Control (ATC) can reduce the requested altitude if deemed necessary for safety prior to or during UAS operations.

Procedures

Auditors examined all UAS documentation and NOTAMs for all nine UAS deployments from 2017 through 2018 to determine if:

- The Department maintained a cadre of UA pilots with current and valid remote pilot airman certificate with a small UAS rating.¹⁰
- The UAS was deployed with a two-person team as required.
- A NOTAM was filed prior to deployment.
- The Aero Bureau watch commander was notified prior to deployment.
- A Visual Line of Sight was maintained throughout the deployment.
- The UAS deployment was limited to 400 feet AGL.

Results

All nine (100%) deployments met the criteria.

⁹ The “defined incident perimeter” is defined in the Federal Aviation Administration, Certificates of Authorization 2016-WSA-178-COA as “established by means of barriers, structures, or public safety officials authorized to sufficiently protect nonparticipating persons from entering the perimeter of the operating area.” September 2016.

¹⁰ Per Title 14 CFR §Part 1.1, “small UAS” is defined as an unmanned aircraft weighing less than 55 pounds on takeoff, including everything that is on board or otherwise attached to the aircraft.

UNMANNED AIRCRAFT SYSTEM AUDIT

Project No. 2019-1-A

Objective No. 3 - Compliance with 2016 FAA COA Requirements

Criteria

Federal Aviation Administration, Certificates of Authorization 2016-WSA-178-COA (September 2016), states:

Pilot in Command (PIC) qualification flight hours and currency must be logged in a manner consistent with 14 CFR §Part 61.51(b).¹¹ Flights for the purposes of training the proponent's PICs and VOs (training, proficiency, and experience-building) and determining the PIC's ability to safely operate the UAS in a manner consistent with how the UAS will be operated under this COA are permitted under the terms of this COA.

UAS operations may only be conducted during the daytime and may not be conducted during night, as defined in 14 CFR §Part 1.1.¹² All operations must be conducted under visual meteorological conditions (VMC). Flights under special flight rules are not authorized.

The UAS may not be operated by the PIC from any moving vehicle unless the government entity conducting the PAO (public aircraft operation) has determined that such operations can be conducted without causing undue hazard to persons or property and has presented such safety measures to the FAA.

Procedures

Auditors identified seven of the nine deployments which were subject to the guidelines within the 2016 COA with the FAA. Auditors reviewed the UAS documentation and NOTAMs to determine if the UAS deployment was within daylight hours and complied with the requirement for initial and ongoing training under the COA Special Provisions section, subsection No. 4.

Results

All seven (100%) deployments met the criteria.

¹¹ Title 14 CFR §Part 61.51 states the following for Logbook entries: each person must enter the following information for each flight or lesson logged: date, flight or lesson time, location training occurred, flight training device, PIC, type of training, and conditions of flight.

¹² Per Title 14 CFR §Part 1.1, "Night" is defined as the time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the Air Almanac, converted to local time.

UNMANNED AIRCRAFT SYSTEM AUDIT

Project No. 2019-1-A

Objective No. 4 – Compliance with 2018 FAA COA Requirements

Criteria

In April of 2018, a new COA with the FAA was adopted. It allowed standing waivers for nighttime UAS deployments and eliminated the requirement that training exercises be documented to achieve an acceptable level of competency. If the Department had a need for deployment conditions outside of the revised COA and standing Waiver conditions, a temporary Waiver would be necessary for deployment. Two of the nine UAS deployments in 2018, occurred after the revised COA took effect.

Federal Aviation Administration, Certificates of Authorization 2017-WSA-022-COA (April 2018), states:

All operations will be conducted in compliance with Title 14 CFR §91 and the conditions of the authorization issued herein.¹³ If the operator cannot adhere to any of these requirements a separate FAA form 7711-2 Waiver application may be required.

Procedures

Auditors examined all UAS documentation and NOTAMs for the two applicable UAS deployments in 2018, to determine if the Department complied with the requirements of obtaining a Waiver for any deployment condition outside of the FAA COA that required one.

Results

Of the two deployments, none required a Waiver from the FAA. As a result, this objective was not applicable to the two UAS deployments.

¹³ Title 14 CFR §91 deals specifically with General Operating and Flight Rules.

UNMANNED AIRCRAFT SYSTEM AUDIT
Project No. 2019-1-A

SUMMARY OF RESULTS

The audit yielded the following results:

Table No. 1 - Summary of Audit Results

Objective No.	Audit Objectives	Met the Criteria
1	AUTHORIZED UAS DEPLOYMENT	100%
	<i>Determine if the UAS deployment was for an approved mission type and was authorized by the SEB Team Commander at the time of the request.</i>	
2	UAS DEPLOYMENT REQUIREMENTS PER DEPARTMENT AND UNIT POLICIES AND FAA COA**	100%
	<ul style="list-style-type: none"> • <i>Determine if the Department maintained a cadre of individuals certified by the FAA to operate a UAS per the MPP.</i> • <i>Determine if the UAS was deployed with a two person team.</i> • <i>Determine if a NOTAM was filed with the FAA prior to deployment.</i> • <i>Determine if the Aero Bureau watch commander was notified prior to deployment.</i> • <i>Determine if a Visual Line of Sight was maintained throughout the deployment.</i> • <i>Determine if the UAS deployment was limited to 400 feet AGL.</i> 	
3	COMPLIANCE WITH 2017 FAA COA REQUIREMENTS **	100%
	<ul style="list-style-type: none"> • <i>Determine if the UAS deployment was within daylight hours.</i> • <i>Determine if the Department complied with the requirement for initial and ongoing training under the Special Provisions section, subsection No. 4.</i> 	
4	COMPLIANCE WITH 2018 FAA COA REQUIREMENTS	N/A*
	<i>Determine if the Department complied with the requirements of obtaining a waiver for any deployment condition outside of the FAA COA that required one.</i>	

* N/A - Not Applicable **All requirements must be met to be considered in compliance with the criteria.

This space intentionally left blank.

UNMANNED AIRCRAFT SYSTEM AUDIT

Project No. 2019-1-A

ADDITIONAL INFORMATION

Auditors identified the following information that was not addressed in the audit objectives due to limited scope; but may require management's attention in an effort to ensure process improvement:

Visual Inspection

Auditors conducted a visual inspection of the UA. The UA had all required lighting for night time UAS deployment, with positional lights as well as anti-collision lighting that had a three mile capacity. The UA accessories included a camera that had a non-record default setting and no memory card. The UA had no additional brackets or mounting system and no capacity to carry anything other than the camera and lighting. Per both COAs, the Department maintains the UAS in an airworthy condition and has attested to the condition in the COA application with the FAA.

Aero Bureau Notifications and Documentation

Auditors noted that there is no dedicated section on the UAS documentation to record a team commander's authorization of the deployment. There is also no section to record the mandated Aero Bureau notifications, the mandated 400 foot AGL elevation, preflight inspection, or the Visual Line of Sight mandate per the FAA.

NOTAM Documentation

Auditors noted the challenges involved with retrieving archived NOTAMs from the FAA website. It would be beneficial for future reviews, as well as being in compliance with keeping the documents available for review, if the NOTAM was printed and maintained digitally with the UAS documentation.

COC Recommendations

The COC report dated September 28, 2017, was provided to the Department with ten recommendations for the Department's UAS program. On the same date, the Department responded to the report in a letter addressed to the Chair of the COC. In the correspondence, the Department agreed to implement the recommendations in the report. The recommendations and their status are listed below:

1. *The Sheriff should explicitly and unequivocally state that the UAS operated by the LASD is not armed and that the Department has no intention of arming a UAS.*

UNMANNED AIRCRAFT SYSTEM AUDIT

Project No. 2019-1-A

- The Department's MPP Section 5-09/570.00, Unmanned Aircraft System (March, 2017) states that UAS authorized for operation by the Department are not armed with any munitions.
2. *Before seeking to expand the types of missions for which a UAS can be used, the Sheriff should commit to notifying the COC and allowing time for the COC to receive public comment prior to doing so.*
 - The Department has not sought to expand the authorized missions for the UAS program, but has pledged to continue its commitment to transparency with the OIG and COC.
 3. *The LASD Policy Manual should make it explicit that use of a UAS is limited to gaining situational awareness in emergency, life threatening situations.*
 - The Department concurred. MPP Section 5-09/570.00, Unmanned Aircraft System (March, 2017) and SEB Unit Order No. 2017-01 both adopted the language the COC suggested.
 4. *SEB should maintain a log of NOTAMs, the type of operational use authorized, who authorized it and the results of each use.*
 - The Department concurred. The indicated documents are maintained by the Department at SEB and are available for inspection upon request.
 5. *The Department should notify the COC, within 48 hours, through its Executive Director, of any authorized operational uses of UASs and any unauthorized uses.*
 - The Department satisfies this requirement through communication with the Executive Director and the public posting of the requested information on the public LASD.org website.
 6. *On a quarterly basis, the Department should provide the COC with a report regarding all operational uses of the UAS, type of mission for which such use was approved, the results of such uses, and whether or not they were within policy. Further, in the interest of transparency, we recommend that this data be published on the LASD website.*
 - The Department concurred. The information listed was made available on the Departments' website, LASD.org, in the form of quarterly reports regarding UAS deployments.

UNMANNED AIRCRAFT SYSTEM AUDIT
Project No. 2019-1-A

7. *The UAS Program should be audited on at least an annual basis by the LASD. Its audits should be provided to the COC and the OIG.*
 - This report fulfils the recommendation of an annual audit for the UAS Program.
Note The COC recommendations were received by the Department near the end of 2017. For this reason, the 2017 and 2018 audits were combined.*
8. *Modify the Unit Order and Policy Manual to limit preservation of video footage, except for training, from ten to two years, unless there is a pending case requiring that it be preserved beyond two years.*
 - MPP Section 5-09/570.10 and SEB Unit Order No. 2017-01 both adopted the language suggested by the COC and are the current policy of the Department.
9. *Include a separate section in the Policy Manual that specifically addresses the LASD's commitment to maintaining individuals' privacy and other constitutional rights and operating according to the Constitution and the law regarding searches.*
 - The Department's MPP Section 5-09/570.00 states the Department's commitment to ensuring all deployments of the UAS are conducted in accordance with federal and state law. SEB Unit Order No. 2017-01 states the Department's mission to protect lives and property in a constitutionally and legally sound manner and in compliance with FAA regulations.
10. *Assure prompt investigation and appropriate accountability, including discipline when warranted, for out of policy use of the UAS.*
 - It is the Department's ongoing policy to promptly investigate and respond to violations of Department policy.

CONCLUSION

The evidence presented provides reasonable assurance that Department personnel are adhering to policies and procedures regarding the deployment of the Department's UAS.

UNMANNED AIRCRAFT SYSTEM AUDIT
Project No. 2019-1-A

RECOMMENDATIONS

When policies and procedures are not adhered to, it may result in increased risk to the Department. It would be beneficial for management to disseminate the results of this audit to its personnel. Additionally, as a best practice, management is encouraged to continue conducting recurrent and ongoing briefings of policies and procedures. The AAB considers the results of this audit to be a helpful management tool and therefore, makes the following recommendations:

1. It is recommended the SEB reconsider the format of the deployment information sheet to better reflect team commander authorization and all functions they are mandated to perform for documentation purposes. (Additional Information)
2. It is recommended the SEB maintain a printed and digital copy of required NOTAMS and all Waivers. These documents should be filed with the UAS deployment information sheet for more efficient and complete record keeping. (Additional Information)

Views of Responsible Officials

On May 15, 2019, the Office of the Undersheriff submitted a formal response to AAB concurring with the audit results.

UNMANNED AIRCRAFT SYSTEM AUDIT
Project No. 2019-1-A

This audit was submitted on this 15th day of May 2019, by the Audit and Accountability Bureau.

Original signature on file at AAB

DIANNA WOODWARD
Project Manager
Audit and Accountability Bureau
Los Angeles County Sheriff's Department

Original signature on file at AAB

CARLOS FLORES
Assistant Project Manager
Audit and Accountability Bureau
Los Angeles County Sheriff's Department

Original signature on file at AAB

M. ROWENA NELSON
Head Compliance Officer
Audit and Accountability Bureau
Los Angeles County Sheriff's Department

Original signature on file at AAB

ERIC I. STRONG
Acting Captain
Audit and Accountability Bureau
Los Angeles County Sheriff's Department