INTRADEPARTMENTAL CORRESPONDENCE

August 3, 2021
16.1

TO: The Honorable Board of Police Commissioners

FROM: Chief of Police

SUBJECT: SMALL UNMANNED AERIAL SYSTEMS ANNUAL REPORT

RECOMMENDED ACTION

1. The Board of Police Commissioners REVIEW and APPROVE the Department's annual report on the Small Unmanned Aerial Systems (sUAS) Program.

BACKGROUND

On September 26, 2019, the Department established the sUAS Program Deployment Guidelines and Procedures as delineated in Special Order No. 8-2019, following a one-year pilot program. The guidelines require an annual report to the Board of Police Commissioners (BOPC) on the use and deployment of sUAS. On December 20, 2020, Special Order No. 33-2020 amended the sUAS guidelines, authorizing the Multi-Disciplinary Collision Investigation Team (MCIT) to deploy sUAS. To date, Special Weapons and Tactics (SWAT) remains the only Department entity to possess and operate sUAS.

DISCUSSION

The program manager, Air Support Division (ASD), conducted the required evaluation for the period July 1, 2020 to June 30, 2021, in the following areas:

1. An analysis of the use of an sUAS, including results of quarterly audits measuring performance relative to the adherence of deployment and accountability rules;
2. The number of sUAS deployments;
3. The types of situations in which an sUAS was deployed;
4. The overall results and effectiveness of an sUAS in resolving incidents;
5. Whether an sUAS mitigated the risk of harm to officers, suspects, and the public;
6. An overall analysis of the effectiveness when the sUAS was deployed;
7. Whether deployment of an sUAS reduced costs associated with responding to similar incidents; and,
8. Recommendations on whether the use of an sUAS should be continued and, if so, any modifications to these guidelines or other policies and procedures that should be considered.

REPORTING

1. **Analysis of sUAS use, including results of quarterly audits measuring performance relative to the adherence of deployment and accountability rules**

   All flights, including training flights, were analyzed to ensure compliance with Federal Aviation Regulations and program guidelines. All flights complied with established guidelines and regulations. Audit Division conducted an sUAS audit to evaluate compliance with Department policies and procedures. The sUAS program was compliant in all audit objectives except two: 1) Required approval prior to deployment, and 2) Exclusive assignment of sUAS.

   Required approval is covered in Special Order No. 8-2019. The Order states that "any deployment of an sUAS shall be approved by the on-scene or responding Counter-Terrorism and Special Operations Bureau (CTSOB) Staff Officer (i.e. Commander) and the Commanding Officer (i.e. Deputy Chief) of CTSOB." Because the log only captures the approval of one CTSOB approval authority, Audit Division found that the required approvals were not obtained in nine of eleven evaluated deployments.

   The intent of Special Order No. 8, regarding approval, was that final approval must come from the Commanding Officer of CTSOB at the Deputy Chief level rather than allowing a subordinate on scene to do so. That requirement was met in all deployments, notwithstanding whether a subordinate's approval was documented. To eliminate confusion, Special Order No. 33-2020 clarified that any deployment of an sUAS shall be approved by the Bureau Commanding Officer of the entity deploying the sUAS, or in his or her absence, the Acting Commanding Officer of that Bureau.

   With respect to exclusive assignment of an sUAS to a Remote Pilot in Charge (RPIC), Special Order No. 8 states, "The sUAS will be assigned exclusively to the RPIC and operated in coordination with the Program Manager from Air Support Division". This means that an sUAS can only be assigned to a qualified RPIC at the scene of a deployment. It was not intended to mean that a specific sUAS is exclusively assigned to a specific RPIC. A qualified RPIC has operated the sUAS in all deployments to date. Special Order No. 33-2020 clarified that the sUAS may only be operated by an RPIC in coordination with the Program Manager from Air Support Division.

2. **The number of sUAS approved/deployed**

   During the inspection period, the Department received and approved six requests for deployment. All requests except for one resulted in an actual sUAS deployment. On March 16, 2021, there was one request to deploy an sUAS that did not result in an actual deployment at the scene of a barricaded suspect in Southwest Area.

The below table is indicative of the five approvals that resulted in a deployment. Prior to each of these deployments, the SWAT officer-in-charge (OIC) made a request for deployment to the on-scene Metropolitan Division Commanding Officer, who then elevated the request to the appropriate CTSOB staff officer (commander or higher) as designated by the sUAS deployment guidelines and procedures. Upon receipt of approval from the Commanding Officer, CTSOB, the sUAS was deployed. The incident where an approval was obtained but no deployment occurred also met the approval guidelines.

sUAS Tactical Deployments

Date	Location	Area
August 19, 2020	3367 Martin Luther King Jr. Bl. #D	City of Lynwood
February 18, 2021	1711 Winmar Drive	Northeast
April 2, 2021	Figueroa Street and 3rd Street	Central
May 6, 2021	19519 Quail Creek Place	Devonshire
June 29, 2021	2709 ½ Vernon Avenue	Southwest

The following tables shows quarterly usage and deployment:

sUAS Usage and Deployment

Quarter	No. of Practice Flights	Total Practice Flight Time	Number of Tactical Deployment Incidents	Total Tactical Deployment Flight Time	Type of Tactical Deployment Incidents	Chain of Command Approval
Quarter 1-2020	29	03:25:05	1	00:44:00	Barricaded Suspect	Y
Quarter 2-2020	56	03:23:47	0	00:00:00	N/A	N/A
Quarter 3-2021	14	00:34:36	1	00:18:39	Search Warrant	Y
Quarter 4-2021	30	01:33:06	3	00:49:23	Armed Suspect, Barricaded Suspect, Barricaded Suspect	Y
Totals	**129**	**08:56:34**	**5**	**01:52:02**	**N/A**	**N/A**

SWAT Call-Outs vs. sUAS Deployments

Call-Outs & Search Warrants	sUAS Deployment Approvals	sUAS Deployments
128	6	5

3. Types of incidents in which an sUAS was approved/deployed

On **August 19, 2020**, an sUAS was deployed at the scene of a barricaded murder suspect. As the incident unfolded, it was determined that the suspect had entered an adjoining second level apartment from the roof. A Los Angeles County Sheriff's helicopter as well as a Department helicopter were summoned in an attempt to identify the point of entry. However, due to the building design, elevation, and multiple potential entry points, on scene personnel were unable to identify as well as monitor the multiple potential entry points. The sUAS was able to detect a heat source as well as evidence of entry into a specific apartment where the suspect was eventually apprehended. Deputy Chief Peter Zarcone approved the deployment. Approximately 5 hours and 50 minutes elapsed from time of arrival to resolution of the tactical portion of the incident.

On **February 18, 2021**, an sUAS was deployed at the scene of a search warrant where the suspect was believed to be in possession of an assault rifle and other weapons. Additionally, the location was elevated and surrounded by trees, providing the suspect positions of advantage and avenues of escape. The sUAS was deployed just prior to the arrival of the containment team and provided clear video image of the entire property, thus enhancing the safety of the containment officers as they took up their assigned positions. The suspect was called out and taken into custody without incident. Deputy Chief Peter Zarcone approved the deployment. Tactical resolution was estimated to be 30 minutes.

On **March 16, 2021**, an sUAS was approved **but not deployed** for a barricaded shooting suspect purportedly armed with an assault rifle. Prior to the sUAS launch, a containment team was successfully placed and the sUAS was no longer required. Deputy Chief Peter Zarcone approved the deployment.

On **April 2, 2021**, an sUAS was approved for deployment for a subject who was seated in an open-air pedestrian stairway with a firearm within arms' reach. The sUAS was deployed to provide situational awareness and to provide a communication means with the subject via the sUAS speaker. The sUAS video feed was able to clear the front torso of the subject for additional weapons and determined that the subject appeared to be falling in and out of a deep sleep. The video feed provided the arrest team the ability to best time their approach and detain the subject. Deputy Chief Peter Zarcone approved the deployment. Approximately two hours and 15 minutes elapsed from time of arrival to resolution of the tactical portion of the incident.

On **May 6, 2021**, an sUAS was deployed at the scene of a barricaded domestic violence suspect. The sUAS was deployed through a broken window and was able to clear the area behind the front door, allowing officers to safely open the door and insert ground robotics. The sUAS was further utilized to clear the first floor of the location and ultimately observed the suspect enter a specific bedroom, pinpointing her location for officers. Deputy Chief Peter Zarcone approved the deployment. Approximately six hours and 15 minutes elapsed from time of arrival to resolution of the tactical portion of the incident.

On **June 29, 2021,** an sUAS was deployed at the scene of a barricaded suspect. As the incident evolved, chemical agents were introduced into the location with negative results. The entry team was required to leave an area of cover and expose themselves to several large windows as well as a steep narrow stairway that precluded the introduction of robotics. The sUAS was deployed to check and monitor large windows around the location. The sUAS was able to enter the location through a broken window and clear the area behind the front door for the entry team. Deputy Chief Peter A. Zarcone approved the deployment. Approximately three hours 15 minutes elapsed from time of arrival to resolution of the tactical portion of the incident.

4-5. Overall results and effectiveness of an sUAS in resolving incidents, and whether sUAS deployments mitigated risk and harm to officers, suspects and the public

In each of the deployments, SWAT personnel reported the use of an sUAS provided them with real-time video feed in areas they were unable to physically observe or with detail they could not physically observe. This included locations where a suspect could secrete themselves and initiate an attack on officers. Often, SWAT personnel must approach points of entry to structures that are confined and lack cover. Through the deployment of an sUAS during an incident, SWAT personnel can determine whether there is a suspect in the immediate vicinity of a door that was to be breached. During a search warrant service, the sUAS can assist in clearing yards and open areas with the use of a thermal camera during hours of darkness before containment is established. The common theme during these incidents was the ability to clear and monitor unsecured areas and thereby mitigating officer safety concerns of ambushes, surprise attacks, positions of advantage by suspects and promoting an opportunity for de-escalation. Additionally, during some of these incidents, the introduction of a police K9 would have been within established Department procedures. However, the deployment of the sUAS provided a safe alternative to a potential confrontation between a suspect and police K9, ultimately mitigating risk and harm to the police K9, its assigned handler, the suspect, and the community at large.

6. An overall analysis of the effectiveness when the sUAS was deployed

In all five tactical sUAS deployments, the sUAS played a significant role in safely and effectively resolving the incident at hand. Whether by seeing a fleeing or hiding suspect and allowing officers to be directed to the location of the suspect for an apprehension without incident; providing an overall field of vision to ensure the safety of officers directing their attention to apprehending a suspect; allowing officers to see into an area not visible to their personal field of vision and confirming there were no suspects present that could perpetuate harm to them; or, as was demonstrated by one deployment where the use of the sUAS provided officers the ability to time their approach to a suspect who was occasionally falling asleep, the deployment of an sUAS has proven to be an effective tool in safely resolving incidents.

7. Whether deployment of an sUAS reduced costs associated with responding to similar incidents

While it is difficult to say with a degree of certainty what the exact cost savings were to the Department and the City as a result of the sUAS deployments, the below chart provides a generic cost analysis of potential cost savings in the event the decision was made to deploy the sUAS in lieu of an airship in order to gain a tactical advantage. It should be noted that for pre-planned events such as high-risk warrants, the sUAS has proven to be a viable option over the airship due to the airship's noise signature and high probability of alerting occupants/suspects of the presence of law enforcement.

Equipment	Rate/Hour	Total Flight Time of Four sUAS Deployments	Total Flight Time of One pre-planned sUAS Deployments	Cost Saving from Four sUAS Deployments	Total Potential Cost Saving
Airship w/aircrew and fuel	719.07/Hour or $11.98/Minute	1:33:23	00:18:39	$1,118.69	$1,341.76

In addition to mitigating risks to Department personnel, suspects, and the public, the deployment of the sUAS reduces monetary costs associated with personnel, equipment maintenance and/or additional Department assets (e.g. ASD helicopter). The above table depicts a typical Air Support Division deployment, along with the associated personnel and equipment costs. A query of the SWAT database for the same period revealed that there were 128 call-outs for the team. Of this total, the sUAS was deployed on five occasions, for a total flight time in the field of 1:52:02 or almost two hours.

The use of the sUAS, in these circumstances, provided a view as well as a tactical advantage that the airship could not for a variety of reasons. One of the five deployments was for pre-planned warrant operations. Also important to note, is that the decision to release the airship and use the sUAS instead, availed the airship for other field-related duties. This also resulted in reduced required maintenance over an extended period. While the current SWAT database does not specifically track those incidents where the decision was made to use the sUAS in lieu of an airship for tactical reasons, this more than likely was the case when the sUAS was deployed during pre-planned warrant operations, because of the inherent tactical advantage to be gained.

8. **Recommendations on whether the use of an sUAS should be continued and, if so, any modifications to these guidelines or other policies and procedures that should be considered**

   The sUAS program has shown to be beneficial and a significant contributor to the safety of officers, suspects, and the community during critical incidents. In addition, the use of an sUAS has translated to cost savings when able to be used in-lieu of a helicopter. Also, a collateral item realized in cases where an sUAS is used in-lieu of a helicopter is a lessened impact on the community in the affected area. It is recommended that the use of sUAS continue under the current guidelines, policies, and procedures with the following understanding and expectations that may affect the program:

   - Unmanned Traffic Management (UTM) technology is a Federal Aviation Administration (FAA) priority. The UTM will adopt GPS/radar systems to better track aircraft in controlled airspace, such as LAX, Santa Monica, Burbank, etc. The UTM was passed into legislation in January 2021 and currently provides a one-and-a-half-year grace period for sUAS operators. Small Unmanned Aerial Systems technology is ever-changing, emerging, and improving at the pace similar to the introduction of the personal computer/laptop. The FAA is currently trying to keep pace and discussions are active and open regarding regulations, equipment, and systems that may be required for sUAS operations. If and when the FAA mandates any equipment and process requirements, the Department may be required to update the sUAS fleet to comply with FAA regulations.
   - Security concerns with respect to Chinese made sUAS continue to be unresolved at the Federal level. The Department will continue to monitor and evaluate developments.
   - Technology continues to advance at a rapid pace and products will certainly continue to improve and offer greater capabilities. Every year, sUAS companies strive to remain competitive through developments and improvements to their products which include intuitive software to improve pilot's flight control, lightweight/portability, extended flight time through improved batteries, and camera power/clarity with 360-degree range to include the ability to view vertically.

   Keeping up with technology and replacing outdated and obsolete sUAS will become a necessary part of a successful sUAS program.

If additional information regarding this report is required, please contact Captain Sean Parker, Commanding Officer, Air Support Division, at (213) 486-8180.

Respectfully,

MICHEL R. MOORE
Chief of Police

Attachments

3RD Quarter 2020 sUAS Report - July 1, 2020 to September 30, 2020

Los Angeles Police Department Flight Log Report

Flight ID	Timestamp*	Latitude	Longitude	Duration (min)	Mission	Aircraft Name	Aircraft Model	Link to Flight Log
Mission								
Call Out - Part 107								
3493	Aug 19, 2020 12:00:00 AM	Lynwood		0:44:00	Call Out - Part 107	M210	M210	
				0:44:00	Call Out - Part 107			
Training								
59039	Apr 17, 2020 2:12:04 PM GMT	34.082439	-118.242296	0:01:34	Training	LAPD Swat PHANTOM 4 Drone 2	P4 Professional	https://mgc.measure.com/flight-logs/59039
64193	Jul 17, 2020 8:48:19 PM	34.08236197	-118.24240913	0:01:43	Training	LAPD Swat Phantom 1	Phantom 4 Pro	https://mgc.measure.com/flight-logs/64193
64202	Jul 17, 2020 8:59:26 PM	34.08242068	-118.24244794	0:08:20	Training	swatuas...-Mavic 2 Enterprise	Mavic 2 Enterprise Dual	https://mgc.measure.com/flight-logs/64202
64205	Jul 17, 2020 9:03:07 PM	34.08236834	-118.24238697	0:08:36	Training	LAPD Swat PHANTOM 4 Drone 2	Phantom 4 Pro	https://mgc.measure.com/flight-logs/64205
64210	Jul 17, 2020 9:48:00 PM	34.08236873	-118.24237302	0:01:47	Training	LAPD Swat Phantom 1	Phantom 4 Pro	https://mgc.measure.com/flight-logs/64210
64212	Jul 17, 2020 9:50:43 PM	34.08236855	-118.24235282	0:01:47	Training	LAPD Swat Phantom 1	Phantom 4 Pro	https://mgc.measure.com/flight-logs/64212
64213	Jul 17, 2020 9:54:59 PM			0:00:18	Training	LAPD Swat PHANTOM 4 Drone 2	Phantom 4 Pro	https://mgc.measure.com/flight-logs/64213
64214	Jul 17, 2020 9:55:58 PM	34.08243804	-118.24241303	0:00:28	Training	LAPD Swat PHANTOM 4 Drone 2	Phantom 4 Pro	https://mgc.measure.com/flight-logs/64214
64215	Jul 17, 2020 9:59:04 PM	34.08241328	-118.2424122	0:08:27	Training	LAPD Swat PHANTOM 4 Drone 2	Phantom 4 Pro	https://mgc.measure.com/flight-logs/64215
	July 22, 2020	34.08241329	-118.2424122	0:10:00	Training	LAPD Swat PHANTOM 4 Drone 2	Phantom 4 Pro	
69692	Aug 15, 2020 2:35:06 AM	34.08251221	-118.24233352	0:00:02	Training	M210	M210	https://mgc.measure.com/flight-logs/69692
69693	Aug 15, 2020 2:25:25 AM	34.0824532	-118.24225473	0:09:40	Training	M210	M210	https://mgc.measure.com/flight-logs/69693
69697	Aug 14, 2020 7:26:56 PM	34.08234497	-118.24228031	0:07:30	Training	swatuas...-Mavic 2 Enterprise	Mavic 2 Enterprise Dual	https://mgc.measure.com/flight-logs/69697
69699	Aug 14, 2020 7:43:09 PM	34.08235421	-118.24226459	0:00:20	Training	swatuas...-Mavic 2 Enterprise	Mavic 2 Enterprise Dual	https://mgc.measure.com/flight-logs/69699
69692	Aug 14, 2020 7:48:57 PM	34.08236061	-118.24229606	0:02:42	Training	swatuas...-Mavic 2 Enterprise	Mavic 2 Enterprise Dual	https://mgc.measure.com/flight-logs/69692
69696	Aug 14, 2020 8:14:54 PM	34.08236818	-118.24221699	0:04:09	Training	LAPD Swat PHANTOM 4 Drone 2	Phantom 4 Pro	https://mgc.measure.com/flight-logs/69696
	Aug 27, 2020	34.08236818	-118.24221699	0:10:00	Training	M210	M210	
	Aug 27, 2020	34.08236818	-118.24221699	0:01:00	Training	M210	M210	
	Aug 27, 2020	34.08236818	-118.24221699	0:14:00	Training	M210	M210	
	Aug 27, 2020	34.08236818	-118.24221699	0:15:00	Training	swatuas...-Mavic 2 Enterprise	Mavic 2 Enterprise Dual	
	Aug 27, 2020	34.08236818	-118.24221699	0:15:00	Training	LAPD Swat PHANTOM 4 Drone 2	Phantom 4 Pro	
	Aug 27, 2020	34.08236818	-118.24221699	0:03:00	Training	LAPD Swat Phantom 1	Phantom 4 Pro	
	Aug 27, 2020	34.08236818	-118.24221699	0:05:00	Training	LAPD Swat Phantom 1	Phantom 4 Pro	
	Sep 2, 2020	Irvine		0:15:00	Training	M210	M210	
	Sep 2, 2020	Irvine		0:03:00	Training	M210	M210	
	Sep 2, 2020	Irvine		0:15:00	Training	M210	M210	
	Sep 3,2020	San Bernardino		0:20:00	Training	swatuas...-Mavic 2 Enterprise	Mavic 2 Enterprise Dual	
	Sep 3, 2020	San Bernardino		0:10:00	Training	swatuas...-Mavic 2 Enterprise	Mavic 2 Enterprise Dual	
71644	Sep 4, 2020 3:18:39 AM	34.178966	-117.392613	0:00:42	Training	swatuas...-Mavic 2 Enterprise	58	https://mgc.measure.com/flight-logs/71644
				3:25:05	Training			

Total Recap

Flights in report: 29

Flight Time: Total 4:09:05

Run Date: Tue Jul 07 15:44:32 2020 Report prepared by Air Support Division, LAPD.

* Time is in GMT , subtract 8 hours for PST or subtract 7 hours for PDT

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flightGUID	flightNum	name	flightDate	placeName	droneName	Duration (seconds)	TakeOff latitude	TakeOff longitude
D23CD331-B4D2-493C-83FF-0340D3457888	3647	Flight 2020-12-16 17:51:33	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	232s	34.08288137	-118.2421788
B8EE6494-BFA9-D12F-8746-AE83AE26CD28	3652	Flight 2020-12-16 17:44:03	2020-12-16	Academy Road, Dayton Avenue	M210	374s	34.08279388	-118.2422089
E81B0972-7774-27E3-9D03-1689B946D88A	3646	Flight 2020-12-16 17:40:16	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	111s	34.08279564	-118.242273
E93D2D80-157A-57FD-2085-140CE0639D02	3645	Flight 2020-12-16 17:38:54	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	72s	34.08278595	-118.2422715
3BC989C0-C3C6-9036-F1F7-CECD2DF84026	3651	Flight 2020-12-16 17:36:44	2020-12-16	Academy Road, Dayton Avenue	M210	372s	34.08278745	-118.2422166
6E0D1686-1DA9-88F8-12A6-0BF53E9D120Z	3644	Flight 2020-12-16 17:31:53	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	166s	34.0827811	-118.2423069
5617DB07-9F89-ACFC-2F90-B07EE850EA81	3643	Flight 2020-12-16 17:31:27	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	23s	34.0828113	-118.2423148
0FD7B3EF-737B-DBF1-7968-AE0A8BBA32B6	3650	Flight 2020-12-16 17:29:41	2020-12-16	Academy Road, Dayton Avenue	M210	153s	34.08279353	-118.2421943
685C9AC7-E989-4887-8023-31D892E98D2A	3642	Flight 2020-12-16 17:23:24	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	394s	34.08279875	-118.2422706
ABC62A52-26A4-6E62-D195-2D7AA656BEB3	3649	Flight 2020-12-16 17:14:22	2020-12-16	Academy Road, Dayton Avenue	M210	555s	34.08280896	-118.2422063
81432491-2068-B3BB-B744-6D33DA7B690F	3648	Flight 2020-12-16 17:08:07	2020-12-16	Academy Road, Dayton Avenue	M210	225s	34.08275593	-118.2421913
5E660ABA-A385-99AE-2018-F668B2A39648	3641	Flight 2020-12-16 17:03:02	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	698s	34.08280776	-118.2422962
A94E1DCF-420F-4914-7667-66283F6A9EAD	3640	Flight 2020-12-16 16:42:24	2020-12-16	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	219s	34.0824212	-118.2423184
E699F082-6B85-EAF4-00B3-FE2CB9AC83D6	3639	Flight 2020-12-16 16:36:06	2020-12-16	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	319s	34.08233367	-118.2426871
35B76172-8291-606E-F129-97758804AE8C	3638	Flight 2020-12-16 16:27:05	2020-12-16	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	460s	34.08250602	-118.2422986
2B3FEAD3-C2B1-1BA3-74D6-212C16BD0514	3637	Flight 2020-12-16 16:24:06	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	133s	34.0824268	-118.2422778
AF0D667B-28B0-FC21-4A72-772524139B3F	3636	Flight 2020-12-16 16:19:36	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	187s	34.08239727	-118.2422627
A8C8200A-BF35-C9F0-C1C7-A586CC3691D4	3635	Flight 2020-12-16 16:14:31	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	97s	34.08239856	-118.2422985
1B678DF9-1B47-16D7-C6D4-F622A8773918	3634	Flight 2020-12-16 16:11:25	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	157s	34.08244165	-118.2422721
FD198E0C-4916-858A-F825-2AD79BAB13C1	3633	Flight 2020-12-16 16:08:33	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	140s	34.08243088	-118.2422595
4B32E2E7-9638-DD26-6FC0-2620E89F91E8	3632	Flight 2020-12-16 16:01:20	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	152s	34.08241761	-118.2422674
4B4BDC62-4767-CA7A-E16D-44DA02BEDFC4	3631	Flight 2020-12-16 15:56:00	2020-12-16	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	151s	34.08242112	-118.2422854
28128022-6A24-1A8E-7960-880A9D45749E	3630	Flight 2020-12-04 15:44:14	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	90s	34.08245433	-118.2422733
2BCCE4DA-F896-4D74-A312-67186DCCD074	3629	Flight 2020-12-04 15:35:27	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	83s	34.08249629	-118.2422218
D19D4496-9F4F-B29A-0A1E-A933B33D0F0C	3628	Flight 2020-12-04 15:33:44	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	74s	34.08251637	-118.2424647
2BF97800-92B9-E76F-2A5B-6E7DBF634FAA	3627	Flight 2020-12-04 15:29:27	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	252s	34.08262463	-118.2422916
FC9204BD-AD68-4B82-9FCE-B5D27B46CAB4	3626	Flight 2020-12-04 15:25:29	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	152s	34.08250001	-118.2424261
2BEA9DB1-739A-B493-0FA7-E56402AB4672	3625	Flight 2020-12-04 15:22:35	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	122s	34.0824852	-118.2422964
8BBBA0DE-F409-E30F-1F31-337EBC67C0BE	3624	Flight 2020-12-04 15:19:14	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	93s	34.08252012	-118.242466
96B6BFB9-EBB4-516E-4404-ADC9EF89251D	3623	Flight 2020-12-04 15:17:57	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	75s	34.08252257	-118.2424733
30340E91-404B-E995-8ED6-1FF15E3198C3	3622	Flight 2020-12-04 15:17:22	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	29s	34.08255957	-118.2424854
705EA200-E80D-B90F-7B07-1AE0F0C8983B	3621	Flight 2020-12-04 15:15:09	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	88s	34.08247315	-118.242237
19C8B8BB-8D44-BFBB-60E0-668DBBD06B69	3620	Flight 2020-12-04 15:14:03	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	59s	34.08251173	-118.2424609
380274DA-6135-6D9B-4890-66E3FD76D060	3619	Flight 2020-12-04 15:12:23	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	96s	34.08245505	-118.2422071
CF9C6496-2460-ACDC-774F-CC0F90A6E241	3618	Flight 2020-12-04 15:10:19	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	90s	34.08246087	-118.2422092
A89A0490-4D85-77D8-B484-F1E25837D403	3617	Flight 2020-12-04 15:07:42	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	115s	34.08245611	-118.2422108
ED993227-E56B-6272-9E54-FAB1967B369F	3616	Flight 2020-12-04 15:05:34	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	98s	34.08246535	-118.2422285
6BF6AF47-113F-8D81-75A9-02B364F89AFB	3615	Flight 2020-12-04 15:02:29	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	158s	34.08246898	-118.2422104
CB282F16-2BEE-66B6-D4F0-92F8066BD019	3614	Flight 2020-12-04 14:59:42	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	136s	34.08247217	-118.2422496
35AE9E26-893D-1D06-FBB6-17E33C2E6E33	3613	Flight 2020-12-04 14:49:52	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	416s	34.08243677	-118.2421854
4D84248A-B116-00EA-B232-05087F5C3BC0	3612	Flight 2020-12-04 14:45:03	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	109s	34.0824305	-118.2421731
8EF2D308-0E5E-B0A1-9B3C-309764C8196D	3611	Flight 2020-12-04 14:39:14	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	126s	34.08251138	-118.24247
4814A800-65A1-E82C-BFEA-79CEBA70BB48	3610	Flight 2020-12-04 14:37:01	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	106s	34.08254366	-118.2423521
5BF189C1-B8E8-9346-C0C2-107F0CC38C43	3609	Flight 2020-12-04 14:32:51	2020-12-04	Academy Road, Dayton Avenue	LAPD Swat PHANTOM 4 Drone 2	159s	34.08254527	-118.2422511
FF2B3B00-E991-CAC4-0432-34D8FC84D19C	3607	Flight 2020-11-06 16:55:50	2020-11-06	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	461s	34.08265991	-118.2423466
B10269F5-0475-2109-86E5-13AD71C8F879	3606	Flight 2020-11-06 16:43:36	2020-11-06	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	509s	34.08291601	-118.242417
98E367F1-079B-44B6-906A-9A175D8A0EE3	3605	Flight 2020-11-06 16:34:53	2020-11-06	Academy Road, Dayton Avenue	swatuas-Mavic 2 Enterprise	387s	34.08281836	-118.2424639
0830EDAC-2FC9-FE1F-CA42-3518E4BC81FB	3604	Flight 2020-11-06 16:10:30	2020-11-06	Academy Road, Dayton Avenue	LAPD Swat Phantom 1	341s	34.08274131	-118.2425801
1BE49FEB-B8C3-9808-B2E6-FFF6C3300A81	3608	Flight 2020-11-06 16:07:05	2020-11-06	Academy Road, Dayton Avenue	M210	592s	34.08277961	-118.242496
CF44ED47-3B72-0FD2-FFF0-B61C76482C9D	3603	Flight 2020-11-06 15:57:45	2020-11-06	Academy Road, Dayton Avenue	LAPD Swat Phantom 1	319s	34.08270234	-118.242553
6EC80F09-309F-72A7-D0BF-80999049140C	3602	Flight 2020-11-06 15:45:47	2020-11-06	Academy Road, Dayton Avenue	LAPD Swat Phantom 1	398s	34.08262368	-118.2424276
0F8E946E-CF29-F0BB-307D-F194969A2120	3601	Flight 2020-11-06 15:42:36	2020-11-06	Academy Road, Dayton Avenue	LAPD Swat Phantom 1	119s	34.08279691	-118.2424647
5B7E4639-7021-ECDE-E36D-D260C507BF1E	3600	Flight 2020-11-06 15:37:42	2020-11-06	Academy Road, Dayton Avenue	LAPD Swat Phantom 1	252s	34.08279993	-118.2425218
6F1F4CAB-33A5-A2A2-6DFC-8CE32D78D1F9	3599	Flight 2020-11-06 15:27:08	2020-11-06	Academy Road, Dayton Avenue	LAPD Swat Phantom 1	354s	34.08274121	-118.2423738
738C362A-3F43-4536-4DC2-0D970FDE72D0	3598	Flight 2020-11-06 15:23:54	2020-11-06	Academy Road, Dayton Avenue	LAPD Swat Phantom 1	52s	34.08271205	-118.2423846
7E19BD18-A135-7F9F-6E70-AB8362DFB2CF	3597	Flight 2020-11-06 15:18:39	2020-11-06	Academy Road, Dayton Avenue	LAPD Swat Phantom 1	311s	34.0827757	-118.2424858
					TOTAL TIME	3h 23m 47s		

3rd Quarter 2021 sUAS Report - January 1, 2021 to March 31, 2021

Los Angeles Police Department Flight Log Report

Flight ID	Timestamp*	Latitude	Longitude	Dura(min/sec)	Aircraft Name	Aircraft Model	Link to Flight Log
88809	Jan 29, 2021 11:54:27 PM	34.07256293	-118.27681556	2m 16s	swatuas...-Mavic 2 Enterprise	Mavic 2 Enterprise Dual	https://mgc.measure.com/flight-logs/88809
88810	Jan 29, 2021 11:53:29 PM	34.07258996	-118.27681279	25s	swatuas...-Mavic 2 Enterprise	Mavic 2 Enterprise Dual	https://mgc.measure.com/flight-logs/88810
88811	Jan 30, 2021 12:01:41 AM	34.07247515	-118.27672093	4m 19s	swatuas...-Mavic 2 Enterprise	Mavic 2 Enterprise Dual	https://mgc.measure.com/flight-logs/88811
88812	Jan 29, 2021 11:53:25 PM	34.07258893	-118.27681248	3s	swatuas...-Mavic 2 Enterprise	Mavic 2 Enterprise Dual	https://mgc.measure.com/flight-logs/88812
89747	Jan 29, 2021 10:17:21 PM	34.0723913	-118.27635863	1m 57s	LAPD Swat Phantom 1	Phantom 4 Pro	https://mgc.measure.com/flight-logs/89747
89748	Feb 10, 2021 9:36:28 PM	34.08239111	-118.24249864	24s	LAPD Swat Phantom 1	Phantom 4 Pro	https://mgc.measure.com/flight-logs/89748
89749	Feb 10, 2021 9:44:48 PM	34.08242814	-118.24248992	4m 27s	LAPD Swat Phantom 1	Phantom 4 Pro	https://mgc.measure.com/flight-logs/89749
95779	Feb 17, 2021 10:27:54 PM			2m 55s	swatuas...-Mavic 2 Enterprise	58	https://mgc.measure.com/flight-logs/95779
95780	Feb 18, 2021 2:08:43 PM	34.102645	-118.225106	6m 19s	swatuas...-Mavic 2 Enterprise	58	https://mgc.measure.com/flight-logs/95780
95781	Feb 18, 2021 1:55:32 PM	34.102647	-118.225112	12m 20s	swatuas...-Mavic 2 Enterprise	58	https://mgc.measure.com/flight-logs/95781
98837	Feb 10, 2021 9:33:11 PM	34.08256352	-118.24274657	4m 58s	LAPD Swat PHANTOM 4 Drone 2	Phantom 4 Pro	https://mgc.measure.com/flight-logs/98837
98856	Jan 29, 2021 10:49:43 PM			2m 21s	M210	Matrice 210	https://mgc.measure.com/flight-logs/98856
98860	Feb 10, 2021 10:46:42 PM	34.082371	-118.242316	3m 28s	M210	Matrice 210	https://mgc.measure.com/flight-logs/98860
100268	Jan 29, 2021 10:52:07 PM			1s	M210	Matrice 210	https://mgc.measure.com/flight-logs/100268
103962	Mar 22, 2021 5:09:59 PM	34.013596	-118.284273	4m 22s	M210	Matrice 210	https://mgc.measure.com/flight-logs/103962
103963	Mar 22, 2021 4:32:38 PM	34.013601	-118.284231	2m 40s	M210	Matrice 210	https://mgc.measure.com/flight-logs/103963
				0:53:15			

Flights in report: 16

Flight Time: Total 0:53:15

Run Date: Tue Jul 07 15:44:32 2020 Report prepared by Air Support Division, LAPD.

*** Time is in GMT , subtract 8 hours for PST or subtract 7 hours for PDT**

4th Quarter 2021 sUAS Report - April 1, 2021 to June 30, 2021

Los Angeles Police Department Flight Log Report

Flight ID	Timestamp*	Latitude	Longitude	Dura(min/sec)	Aircraft Model	Link to Flight Log
173576	Apr 9, 2021 8:40:50 PM			25s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173576
173577	Apr 9, 2021 8:37:51 PM			2m 8s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173577
173578	Apr 21, 2021 8:43:59 PM	33.854961	-118.314081	27s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173578
173579	Apr 9, 2021 8:31:48 PM			1m 16s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173579
173580	Apr 9, 2021 7:52:55 PM			4m 31s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173580
173581	Apr 21, 2021 9:00:10 PM			36s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173581
173582	Apr 21, 2021 10:05:56 PM			54s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173582
173583	Apr 21, 2021 8:45:08 PM	33.854939	-118.314114	1m 14s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173583
173584	Apr 9, 2021 8:42:07 PM			8m 51s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173584
173585	Apr 23, 2021 7:54:51 PM			4m 51s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173585
173586	Apr 23, 2021 8:16:43 PM	34.08279	-118.240837	2m 12s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173586
173587	Apr 21, 2021 10:00:51 PM			4m 4s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173587
173593	May 3, 2021 8:59:58 PM			39s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173593
173594	May 3, 2021 9:48:20 PM			11s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173594
173595	May 3, 2021 8:35:09 PM			17s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173595
173597	Apr 23, 2021 8:19:39 PM			1m 31s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173597
173598	May 3, 2021 10:28:58 PM	34.155107	-118.265574	1m 5s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173598
173599	May 3, 2021 8:41:27 PM			1m 8s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173599
173600	May 3, 2021 8:43:09 PM			2m 54s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173600
173602	May 3, 2021 8:49:02 PM			2m 20s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173602
173604	May 3, 2021 8:52:22 PM			2m 16s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173604
173605	May 3, 2021 10:39:28 PM			41s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173605
173606	May 3, 2021 9:45:44 PM			2m 6s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173606
173607	May 3, 2021 10:35:24 PM			2m 53s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173607
173612	May 3, 2021 10:40:20 PM			1m 23s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173612
173619	Jun 29, 2021 7:29:42 PM	34.003704	-118.323018	5m 38s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173619
173621	May 3, 2021 9:48:51 PM			2m 24s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173621
173622	May 6, 2021 10:48:58 PM	34.277984	-118.558719	1m 38s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173622
173623	May 3, 2021 10:42:31 PM			3m 17s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173623
173625	May 3, 2021 10:54:42 PM			4m 7s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173625

173633	May 6, 2021 9:56:29 PM	34.27813	-118.558527	3m 42s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173633
173638	May 3, 2021 10:30:13 PM	34.155097	-118.265561	4m 11s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173638
173653	May 6, 2021 11:26:58 PM	34.277884	-118.55868	13m 43s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173653
173570	May 6, 2021 14:38:58 PM	34.277884	-118.55868	14m 28s	swatuas...-Mavic 2 Enterprise	
173571	May 6, 2021 14:22:58 PM	34.277884	-118.55868	9m 56s	swatuas...-Mavic 2 Enterprise	
173654	Apr 16, 2021 9:25:30 PM	34.049917	-118.169729	14m 16s	swatuas...-Mavic 2 Enterprise	https://mgc.measure.com/flight-logs/173654
173569	Apr 2, 2021 17:53:30 PM			14m 16s		
			Total Time:	**2:22:29**	Hours:Minutes:Seconds	

Flights in report: 37

Flight Time: Total **2:22:29**

Run Date: Thursday Jul 01 15:44:32 2021 Report prepared by Air Support Division, LAPD.

*** Time is in GMT , subtract 8 hours for PST or subtract 7 hours for PDT**