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FIRE CHIEF

May 17, 2017

BOARD OF FIRE COMMISSIONERS
FILE NO. 17-064

TO: Board of Fire Commissioners

FROM:  Ralph M. Terrazas, Fire Chief

SUBJECT: UNMANNED AERIAL SYSTEMS REPORT

FINAL ACTION:	<input type="checkbox"/> Approved	<input type="checkbox"/> Approved w/Corrections	<input type="checkbox"/> Withdrawn
	<input type="checkbox"/> Denied	<input type="checkbox"/> Received & Filed	<input type="checkbox"/> Other

SUMMARY

On April 8, 2016, the Los Angeles City Council asked the Los Angeles Fire Department ("Department") to "report on the feasibility of utilizing drones to assess significant incidents, on how drones could be used for information gathering during large fires, and what issues the use of drones by the LAFD may raise (Council File: 16-0410)." Since then, the Department has studied the potential of both acquiring federal authorization to utilize drones, or unmanned aerial systems (UAS), and potential departmental policies for such usage.

RECOMMENDATIONS

That the Board:

1. Allow the Department to apply for participation in the process to obtain a certificate of authorization to operate UAS as part of its initial action hazard mitigation and response matrix.
2. Formalize operations within the Department to ensure full functionality and operational effectiveness relative to UAS.

OVERVIEW

The Department is seeking to be one of the first major metropolitan departments to obtain a Certificate of Waiver/Authorization (COA) to operate UAS as part of its initial action hazard mitigation and response matrix. After the City Council asked to study the feasibility of using UAS, the Department formed a committee consisting of members representing functions that would oversee usage, including: Operations, Fire Prevention and Public Safety, Training and Air Operations.

The committee evaluated the feasibility of a Department-wide UAS program by studying industry leaders, such as the Austin Fire Department and their collaboration with the Austin Department of Emergency Management, and the Ventura County Sheriff's Department, the latter of which is the only public service agency with a national COA from the Federal Aviation Administration (FAA). The committee also consulted with the Air Support Division of the Los Angeles Police Department, researching the legal and regulatory statutes including potential financial and operational factors. The result is a comprehensive report that includes: 1) the FAA certification process and requirements, 2) justification and benefit analysis, and 3) proposed Department policy, operational guidelines, training and certification processes. Implementation of the administrative and operational proposals contained in this document, are solely contingent upon FAA review and approval.

For Departmental purposes, any UAS that may be used by Department personnel are operational tools to be used in a variety of scenarios, including, but not limited to operational pre-planning, hazard and damage assessment, hazardous material identifications, confined space search operations and victim rescue, i.e. "river rescue" and "hiker" incidents. Procuring a COA from the FAA would allow the Department to operate a UAS but only in the most restrictive sense.

The UAS **will not** be used to monitor or provide surveillance for law enforcement purposes. A UAS program can also be used to provide greater training and used for situational awareness thereby enhancing firefighter and police safety during response and mitigation of emergent situations or surveillance. The Department UAS will only be operated by trained, certified and licensed members in both operational and observational capacities. The six UAS and all related support equipment will be kept as follows: (1) at each geographic Bureau office in the charge of the Training Support Specialists (TSS) for the Operations South and West Bureaus; stored on the Command 22 and 42 suburban for the Central and Valley Bureaus, and (2) assigned to the In-Service Training Section (ISTS).

PROCEDURE

Once approved, the process for deploying UAS would be:

1. Upon request, the UAS flight team (operator and an observer) will deploy to the designated location within the Department fire protection area as well as its surrounding mutual aid response areas.
2. The UAS Operator along with UAS Observer will determine if safe operation of the UAS can be accomplished as requested. The decision will be contingent upon several factors to include physical features of the area, obstructions to flight, terrain, and the weather.
3. The Incident Commander and/or UAS Operator will coordinate with the LAFD Air Operations Section Commander or Chief Pilot for final clearance for all UAS flight operations.

QUALIFICATIONS

The following qualifications are both federally and locally recognized as required for all UAS operators:

1. Department UAS operators must have a FAA Part 107 Small Unmanned Aircraft Systems (sUAS) ALC-451 ("Part 107 license").
2. The operator must have a minimum of two hours of knowledge-based training and a minimum of four hours of skill based training conducted by a designated Department instructor followed by ten hours of supervised in-flight operation.
3. UAS operators must maintain their Part 107 license and maintain flight logs and all necessary records to meet the FAA's requirements. UAS operators will also be required to open, complete and maintain a taskbook specific to specialized flight operations; i.e. HazMat, Urban Search and Rescue or confined space flight.

DUTIES

The UAS Operator will function as team leader and the operator of the UAS. The operator will ultimately be responsible for the operation and solely responsible for input of commands of the UAS during flight. The Operator will also be responsible for UAS assembly, flight preparation, post flight procedures, and UAS disassembly/storage procedures. The Operator will be responsible for documenting all UAS flights. UAS Safety (Observer) will visually ensure that the UAS is operating in a safe area and in a safe manner. UAS Safety will also ensure that the Operator is not interrupted during flight. UAS Data Technician will be utilized anytime the documentation captured by the UAS needs to be provided in "real time" or in the initial action phase of an incident.

SAFETY

Safety of the UAS is the responsibility of the UAS Pilot and UAS Observer, except as required by the mission. UAS Pilot and UAS Observer will ensure that no persons are in the vicinity of the UAS during operations to avoid flying over non-essential persons or vehicles. Under no circumstances shall the UAS be utilized when LAFD helicopters are engaged, over large gatherings of people or operated from a moving vehicle. Except for the purpose of training, only personnel who meet the requirements set forth by the FAA and in the QUALIFICATIONS section of this document will be permitted to act as a UAS Pilot.

UAS Pilot will comply with the UAS User Manual, which will be provided with each UAS, outlining the warnings, limitations, and/or checklists at all times unless an emergency dictates otherwise. The Department shall be guided by FAA guidelines when the UAS is to be deployed. All UAS operations will be conducted in Day/Visual Meteorological Conditions. UAS night operations must be specifically requested and authorized.

OPERATIONS

The UAS will be flown in accordance with all FAA guidelines and manufacturer specification, and in consideration of the following:

1. Care shall be taken in the operation of the UAS to avoid flying over persons and property that could result in injury or damage whenever possible.
2. Lost Link response shall be set prior to flight.
3. The UAS shall not be operated at altitudes greater than 400 feet or at speeds greater than 50 knots (57mph).
4. For all operations, UAS Safety shall maintain a visual observation on the UAS and the UAS operator during flight.

INCIDENTS/ACCIDENTS

During an incident/accident, efforts will be focused on:

1. Minimizing risk to life
2. Care for the injured
3. Protect property

In the event of a UAS incident accident, the following notifications will be made:

1. Fire/EMS personnel
2. LAFD or LAPD Air Operations
3. Appropriate Bureau commander
4. Investigation: A full investigation, under the direction of LAFD Air Operations, will be conducted in the event of a UAS incident accident or failure
5. Any damage to the UAS or its support equipment shall be immediately reported Through Channels to the Deputy Chief of the Training and Support Bureau

ARCHIVAL

1. Archive and catalog, then surrender any recorded photo/video material, within 12 hours, to the LAFD custodian of records (Arson section).
2. Recorded photo/video material not related to an LAFD response; i.e. planned training event, shall be surrendered, within 12 hours, to ISTS and the Community Liaison Office.

COST

The Los Angeles Fire Department Foundation has graciously agreed to fund the primary operating costs associated with acquiring new equipment and associated technological needs.

While there could be significant cost savings utilizing a UAV at incidents, it should be noted that any program using this technology will not replace the critical functions and

unmatched professionalism of manned LAFD aircrafts. Still having this tool at our disposal will significantly offset operating costs now associated with LAFD Air Operations.

PRIVACY CONCERNS

The Department is aware of the concerns surrounding Unmanned Aerial Systems, particularly as they relate to privacy. The American Civil Liberties Union (ACLU) issued a 22-page report on the growing use of the UAS. This December 2011 report included a list of recommendations and considerations that should be addressed by an agency wishing to deploy a UAS. In summary, it is the ACLU's opinion that uniform rules should be enacted to ensure "we can enjoy the benefits of this new technology without bringing us closer to a "surveillance society" in which our every move is monitored, tracked, recorded, and scrutinized by the government."

What follows are the ACLU recommendations and the Department's response to each:

ACLU Concern	LAFD Response
Usage Limits: UAVs should be subject to strict regulation to ensure that their use does not eviscerate the privacy that Americans have traditionally enjoyed and rightly expect. Innocent Americans should not have to worry that their activities will be scrutinized by drones. To this end, the use of drones should be prohibited for indiscriminate mass surveillance, for example, or for spying based on First Amendment-protected activities. In general, drones should not be deployed except: Where there are specific and articulable grounds to believe that the drone will collect evidence relating to a specific instance of criminal wrongdoing or, if the drone will intrude upon reasonable expectations of privacy, where the government has obtained a warrant based on probable cause; or where there is a geographically confined, time-limited emergency situation in which particular individuals' lives are at risk, such as a fire, hostage crisis, or person lost in the wilderness; or for reasonable non-law enforcement purposes by non-	Any Department-operated UAS will be launched according to the parameters set herein: For training purposes and development of training aids or for responses to emergent incidents where immediate hazard mitigation is required. During training purposes, UAS operations will be limited to observing Department personnel and the community and City leadership will be notified of its launch.

<p>law enforcement agencies, where privacy will not be substantially affected, such as geological inspections or environmental surveys, and where the surveillance will not be used for secondary law enforcement purposes.</p>	
<p>Image Retention: Images of identifiable individuals captured by aerial surveillance technologies should not be retained or shared unless there is reasonable suspicion that the images contain evidence of criminal activity or are relevant to an ongoing investigation or pending criminal trial.</p>	<p>Footage captured by any Department UAS will be retained for record keeping/retention by the Department custodian of records (Arson Section) and portions will be utilized on social media, increasing transparency. An integral part of successful program is a well-developed and proactive media and public awareness campaign. Led by the Community Liaison Office, the Department will take aggressive steps to address concerns and gain support from the public by regularly advertising all phases of the LAFD UAS project.</p>
<p>Public notice. The policies and procedures for the use of aerial surveillance technologies should be explicit and written, and should made public. While it is legitimate for the police to keep the details of particular investigations confidential, policy decisions regarding overall deployment policies—including the privacy tradeoffs they may entail—are a public matter that should be openly discussed</p>	<p>The Department will regularly utilize all media sources to apprise the public of the UAS activity by:</p> <ul style="list-style-type: none"> • Announcing the projects launch; • Incorporating the project into LAFD public facing websites and social media portals; • Regularly publicizing the project's progress; • Scheduling a series of “exhibition flights” open to the public; • Developing a comment and feedback avenue for the public; • Reporting incidents where the UAV is deployed in advance.
<p>Policy: Usage policy on drones should be decided by the public’s representatives, not by police departments, and the policies should be clear, written, and open to the public</p>	<p>This document, will serve as the Department’s official “Deployment and Use Policy” on UAS. Any direction called for herein will only be enacted after thoughtful consideration of and approval by both the Department’s civilian oversight (the Los Angeles Fire Department Board of Fire Commissioners) and the Mayor and City Council, including any relevant committees.</p>

Auditing and effectiveness tracking: Investments in UAVs should not be made without a clear, systematic examination of the costs and benefits involved. And if aerial surveillance technology is deployed, independent audits should be put in place to track the use of UAVs by government, so that citizens and other watchdogs can tell generally how and how often they are being used, whether the original rationale for their deployment is holding up, whether they represent a worthwhile public expenditure, and whether they are being used for improper or expanded purposes.	The Department will submit quarterly reports to the Board of Fire Commissioners and to the City Council and any relevant committee, as needed.
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CONCLUSION

Fire departments throughout the country, led by the Los Angeles Fire Department, go far beyond the task of extinguishing flames. With more than 85% of this Department's call load EMS related, this Department is expected to be an "all risk" response provider. Tools that provide our fire service professionals greater awareness and access to critical information allows for safer and more effective action. It is our obligation to do everything possible to protect the safety and lives of those who are willing to defend the safety and lives of the citizens of Los Angeles.

This is a significant undertaking for the Department but one that is in direct alignment with the strategic plan. Capitalizing on advanced technologies via UAS will greatly improve our tactical effectiveness and provide for a more efficient deployment of resources in both the emergent and expanded incident management scenarios. The committee is working diligently to ensure that we do not suggest or implement anything that falls outside of the strict guidelines set by the FAA, state, and local law or that could disrupt public trust. The committee will continue to seek best practices. Until the FAA and subsequently the Department fully vets and approves the "LAFD UAS Program," no UAS will be deployed to an active incident.

Board report prepared by Richard Fields, Battalion Chief, Battalion 13.