The Bill Blackwood
Law Enforcement Management Institute of Texas

Using Small Unmanned Aircraft Systems (sUAS) In Law Enforcement

A Leadership White Paper
Submitted in Partial Fulfillment
Required for Graduation from the
Leadership Command College

By
Jack Burt

Humble Police Department
Humble, Texas
February 2020

ABSTRACT

Technology is constantly advancing in law enforcement at a rapid pace. The use of small Unmanned Aircraft Systems (sUAS), also known as drones, is becoming more prevalent among law enforcement agencies. With new technology usually comes a steep price tag as well. In the last several years, the price of these drones have dropped dramatically making them more affordable for agencies to utilize in their departments. With any new police technology comes with public scrutiny and with these miniature helicopters hitting the skies for police departments also comes the responsibility of protecting the public's Fourth Amendment rights against warrantless searches.

The benefits for the law enforcement agencies that are using sUAS are showing quicker response times and improving the safety of the officers that are risking their lives everyday doing their jobs. Just some of the many uses for sUAS are search and rescue, bomb threat situations, and active shooter/ hostage situations. Police officers are not strangers to any of these situations and the dangers that come with each of them. For example, with the use of the sUAS, they have proven in situations to be extremely helpful in reducing the times needed for searching the area for people while covering more area doing so. These sUAS also allows police officers to have an aerial view during active shooter situations giving them live footage which gives law enforcement officers a better tactical advantage dealing with these types of situations and reducing the risk for police officer injuries. Law enforcement agencies should implement the use of sUAS within their departments.

TABLE OF CONTENTS

INTRODUCTION

Today more law enforcement agencies are turning towards technology in the way of small Unmanned Aircraft Systems (sUAS) to assist them in law enforcement duties. These sUAS, also known as drones, are able to take flight collecting data on objects below and can simultaneously provide live visual monitoring to law enforcement agencies (Heen, Lieberman, & Miethe, 2017). These unmanned aircraft are proving to be effective and are being used in numerous operations within police agencies. This new technology is gaining the attention of local law enforcement agencies since it can easily fit inside a patrol vehicle and be deployed within a minute or two whenever needed for assistance.

Although sUAS have been around for several decades, within the last several years they have become more prevalent within law enforcement agencies because they are becoming more affordable. The federal government and the United States military began signing contracts for unmanned aircraft in 1984 (Dronethusiast, n.d.). Within the last decade, law enforcement agencies are increasing the use of this technology to improve safety, accuracy and speed in the most critical times and risky situations.

Drones are proving to be highly effective in several situations such as police surveillance, active shooter situations, search and rescue missions, which are just a few of the many uses for law enforcement. Police departments are able to put drones in the air during search and rescue missions and cover a larger area that would take at least 20 police officers or more to do walking on the ground (Alderton, 2018). This is allowing police officers to find missing elderly and young children that have went missing

substantially faster than ever before, thus saving more lives. Using these drones is protecting resources such as tax dollars, money and police officers time (Young, 2017).

Unmanned Aircraft Systems are also proving to help law enforcement officers in situations such as an active shooter from a safe distance in real time (Margaritoff, 2017). They are providing an aerial view to help locate the shooter and it is giving police officers view of the surrounding area (Young, 2017). This is giving police officers a better tactical advantage in locating and determining how many active shooters they have during a hostile situation, which in return is saving more lives of innocent people and keeping police officers safe while doing so. Law enforcement agencies should implement the use of sUAS within their departments, as they are transforming the way officers are performing their job.

POSITION

In October 2017, it was reported that 347 agencies were using Unmanned Aircraft Systems. This was a 518-percent increase within the last 24 months (Margaritoff, 2017). According to the Associated Press, it is estimated that just over 900 Police, Sheriff, Fire and EMS agencies are using unmanned aircraft in the states of Texas, California and Wisconsin (“Law enforcement agencies,” 2018). Drones are a huge asset when it comes to assisting law enforcement agencies (Gallagher, 2016).

With the industry of drones becoming more popular across the United States for police investigations it is projected that over 20,000 agencies will by using them by 2025 (Bond, 2015). This new technology police officers are using is benefiting agencies to help obtain aerial photos and video of major crime scenes such as active shooter and hostage situations.

These drones assist law enforcement officers to accurately locate suspects in active shooter situations, giving them real up to date and critical information to assess the threat at hand. There were six active-shooter incidents that took place from 2000-2006: within the seven years that followed, that number almost tripled, an average of one every three weeks (Brennan, 2017). With school campus and mass shooting incidents on the rise in the United States, unmanned aircraft systems are playing a vital part in these investigations ("Rapid rise," 2018). These sUAS are equipped with cameras that allow the operator to monitor these situations live in real time, gathering the information as it occurs.

In North Texas, officers were able to get a first-hand look on how a drone responded to a mock active shooter situation. While doing the scenario inside the Midlothian Conference Center a suspect ran down a hallway with the drone following them. The drone was able to move faster than officers and get around and check corners for the suspect so the officers did not have to while providing real time information to the officers. This information could enhance law enforcement agencies in protecting their officers from getting into harm's way (Smith, 2017).

In 2015, in San Bernardino, California, a man and woman who carried out a terror attack would have been a prime situation where a drone would have helped officers. After the gun battle with law enforcement officers, the officers had to risk their lives and approach the vehicle the couple was in to see if they were still alive. Rather than sending officers up to the suspect's vehicle they could have sent a drone to check on the status of the shooters (Queally, 2017).

Drones are also showing to be useful in search and rescue missions for missing or endangered persons. They can be deployed quickly and can cover terrain that police officers cannot get to, or the area is too dangerous for police officers to reach. They are able to cover areas faster and can give police officers a “bird’s eye view” of the area they are searching.

In September 2017, a 47-year-old female wandered away from her home in Indianapolis around 2:30 a.m. and ended up in a field. When her family contacted law enforcement they arrived on scene in about 20 minutes. The officer on scene was equipped with a sUAS that had a heat seeking camera attached to it. The officer deployed the drone in the air and was able to locate the missing female within five minutes after deployment of the drone (Donnelly, 2017).

A teacher had been missing for several days in Tippecanoe County, Indiana. After searching and not finding the female, a drone was deployed in the area to help locate this missing person. Within hours the female was located near a retention pond suffering from only minor medical issues. This incident opened the eyes of the sheriff on how effective the drone was in locating the missing person in such a short period of time (Reagan, 2016).

Another similar incident was in 2014 when an 82-year-old man went missing for three days. The police used a helicopter and search and rescue dogs in an attempt to locate the elderly man. They searched heavily wooded areas and local fields without any success. A drone was deployed on the third day and it took only 20 minutes to locate the missing man (Reagan, 2016).

Another reason drones are being used are for bomb threat investigations. Drones are being utilized in these situations as they can be sent into a location and give officers a 360-degree view of the area to help locate any potential bombs in the area. They are being flown over the device, allowing the technicians to assess the bomb from a safe location finding ways to defuse it without causing any casualties. This is just another way this emerging technology is changing the way officers perform their duties. The San Jose Police Department has recently acquired a drone just for this purpose (Alderton, 2018).

In January, 2017, the Los Angeles County Sheriff's Department began deploying drones for hostage and bomb situations. The sheriff said that the drone was a useful tool that will give officers the advantage in potentially deadly situations. Even though the dangers for law enforcement will never be eliminated, this technology will assist in reducing the risks to law enforcement officers (Queally, 2017).

Crash investigations are another use that police agencies are using drones. They are allowing agencies to take aerial photography and video of the crash scene. This is allowing investigators to quickly create a scaled drawing of the crash scene instead of officers having to take manual measurements and ground photos (Margaritoff, 2017). This is allowing officers to clear crash scenes faster and resume normal traffic operations helping eliminate traffic jams.

In August, 2017, Fort Collins, Colorado police began using drones for crash investigations. The Unmanned Aircraft Systems helped police officers take aerial photos faster and open the roads quicker than before. Prior to deploying this technology, the process of taking measurements and collecting evidence was taking

sometimes up to six hours to complete. This caused frustration to drivers on the impacted roadway and created additional risk of crashes to occur (Niedringhaus, 2018). With the use of a drone, it will expedite this process and allow officers to the clear crash scene and open the roadway back up for the motorists. In addition, officers are able to conduct accident investigations at the office instead of on the roadway improving safety of the officers and motorists. Drones cannot replace the crash investigation that officers must do, however it is proving to a helpful tool in collecting evidence faster and more accurately (Niedringhaus, 2018).

COUNTER ARGUMENTS

One of the major concerns regarding use of sUAS in law enforcement agencies is privacy issues. Many people believe that drones are violating their Fourth Amendment rights when it comes to warrantless searches. The decline in trust for law enforcement over the past several years is causing the public to question their privacy on this issue (Young, 2017). The Monmouth University Polling Institute revealed that 69-percent of Americans felt that their privacy would be threatened if law enforcement agencies began using drones that are equipped with cameras and recording capabilities (Rudisil, 2016).

Even though drone technology is advancing faster than the criminal justice system can keep up with, different states have passed laws governing how law enforcement is able to use them. Civil liberties advocates and activists have concerns about what law enforcement agencies can use these drones for. One of the biggest concerns is usage of drones for warrantless surveillance. In 2014, California proposed a bill that would make law enforcement agencies obtain a warrant when conducting

surveillance which was vetoed by the governor that same year (Queally, 2017). However, a spokesman from the Los Angeles County Sheriff's department stated that they would not be using their unmanned aircraft systems to spy on the public. Their policy even forbids them for using it for random surveillance (Queally, 2017).

In 2016, six bills were proposed to the California governor for approval, two were passed and the other four were vetoed (Young, 2017). Fourteen of the fifty states where law enforcement agencies use drones for surveillance reasons are required to obtain a warrant first. In Congress, members in the House and Senate have proposed bills that would require all 50 states to obtain a warrant before conducting any type of surveillance; however those bills died out (Young, 2017). Law enforcement agencies have been meeting with the public to educate them on the laws and limitations on how these drones can be used for law enforcement purposes. Educating the public and giving them insight on how they are being used will help the public accept this new technology tool that police departments are using across the country.

Liability concerns are always an issue for law enforcement agencies when it comes to unmanned aircraft systems (Uleski, 2017). If asked, how many people have crashed a drone, about 80-percent will say they have (Uleski, 2017). The reason why this number is so high is due to lack of training (Uleski, 2017).

The small Unmanned Aircraft Systems are regulated by the Federal Aviation Administration (FAA) (FAA, 2016). If a law enforcement agency crashes a drone resulting in bodily injury or damages over $500 dollars they must report the incident to the FAA within 10 days (FAA, 2016). If a department is reporting too many drone crashes then the FAA has the authority to revoke that operators and/or that law

enforcement agencies privilege to operate their drone within federal airspace (FAA, 2016). In August 2016, the Federal Aviation Administration (FAA) announced the Part 107 rule for commercial drone pilots. The Part 107 rule covers sUAS regulations, weather, aeronautical decision making, routine maintenance and preflight inspections (FAA, 2016).

For law enforcement purposes, the FAA requires a remote pilot to be certified under this Part 107 rule. The training teaches the operator about these safety procedures when operating within the federal airspace and is required by the FAA to be repeated every 24 months for operating efficiency purposes. This bi-annual training insures law enforcement agency officers are operating the drone as safely as possible to protect the public (FAA, 2016).

Many law enforcement agencies will not attempt to purchase these unmanned aircraft systems because they feel the cost is too high. With any new piece of equipment that law enforcement purchases there is maintenance and training costs that need to be considered. This expense has been ongoing for as long as law enforcement agencies have started using the equipment. Law enforcement agencies purchasing drones are typically buying the consumer-level drones instead of the more expensive professional level drones (Templeton, 2017). What a lot of law enforcement agencies do not know is that there are government grants available that can offset some of the costs to purchase these unmanned aircraft systems for their police departments. These grants offset a majority of the costs and make the training and maintenance investment much more affordable for the purchasing law enforcement agency (“FEMA Grants,” n.d.).

RECOMMENDATION

Drones are the newest technology tool that are proven effective for police departments. This technology is changing ways policing is being done much like when law enforcement agencies began taking mugshots or when they started putting laptop computers inside the patrol vehicles. They are proving to be an asset to every agency that has purchased them. These drones are being used for all kinds of situations. They are being used for search and rescue missions, bomb threats, crash reconstruction, active shooter situations and other areas departments identify as useful to improve how police work is done safely and effectively. While conducting these operations, it is improving public and officer safety by providing time sensitive information to help mitigate risk and improve decision making.

If an agency does purchase a drone it is very important to educate the public on the use of their drone. This will allow the public to express their concerns and ask questions to the law enforcement agency. It will also help the public to become more familiar and comfortable with the ways in which their local police department are using drones and how they benefit their community.

Training is required by the FAA when any law enforcement agency purchases a drone. Training helps the law enforcement agency and the public on the operation of these drones to be safely operated in the sky. This gives remote pilots operating these drones better knowledge, which in return lowers the law enforcement agency's liability risk that comes when flying over people and property.

With cost of these drones becoming more-affordable, even smaller agencies can afford to purchase a drone for their agency. They are a lot cheaper and practical then

purchasing a traditional helicopter. In addition the government grants available make this an even more affordable option. Every law enforcement agency, whether they are a big or small, should implement the use of this technology tool to enhance their everyday operations. The capabilities of sUAS is assisting police officers all over the world conduct their duties more safely with improved response times and results which is saving lives and building trust in their communities.

REFERENCES

Alderton, M. (2018, April 13). *To the rescue! Why drones in police work are the future of crime fighting.* Retrieved from http://www.autodesk.com/redshift/drones-in-police-work-future-crime-fighting/

Brennan, W. (2017, January/February). *Bulletproofing America. Could technology help prevent mass shootings?* Retrieved from http://www.theatlantic.com/magazine/archive/2017/01/bulletproofing/508754

Bond, M. (2015, August 10). *Drones a benefit for law enforcement, but raise concerns.* Retrieved from http://www.govtech.com/dc/articles/Drones-a-Benefit-for-Law-Enforcement-but-Raise-Concerns.html

Donnelly, B. (2017, September 14). *Heat-sensing drone finds missing Shelby County woman*. Retrieved from https://www.wishtv.com/top-video/heat-sensing-drone-finds-missing-shelby-county%20-woman/1064162537

Dronethusiast. (n.d.) They History of Drones (Drone History Timeline From (1849-2019) Retrieved from https://www.dronethusiast.com/history-of-drones

Federal Aviation Administration. (2016). Fact Sheet – Small Unmanned Aircraft Regulations (Part 107) Retrieved from: https://news/fact_sheets/news_story.cfm?newsld=20516

FEMA grants for unmanned aerial vehicles (UAV). (n.d.). Received by http://hse-uav.com/uav_grants.htm

Gallagher, K. (2016, December 23). *How drones have become a public safety asset.* Retrieved from https://www.simulyze.com/blog/how-drones-have-become-a-public-safety-asset

Heen, M., Lieberman, J. D., & Miethe, T. D. (2017, November 28). *The thin blue line meets the big blue sky: Perceptions of police legitimacy and public attitudes towards aerial drones*. Retrieved by https://www.tandfonline.com/doi/full/10.1080/1478601X.2017.1404463

Law enforcement agencies turning to drones to fight crime. (2018, May 28). StarAdvertiser. Retrieved by http://staradvertiser.com/2018/05/28/breaking-news/law-enforcement-agencies-turning-to-drones-to-fight-crime/

Margaritoff, M. (2017, October 13). *Drones in law enforcement: How, where and when they're used.* Retrieved by http://www.thedrive.com/aerial/15092/drones-in-law-enforcement-how-where-and-when-theyre-used

Niedringhaus, C. (2018, January 10). *Fort Collins police using drones to expedite crash investigations.* Retrieved by https://www.coloradoan.com/story/news/local/2018/01/10/fort-collins-police-using-drones-expedite-crash-investigations/1017721001/

Queally, J. (2017, January 13). *Los Angeles police use drones to respond to bomb threats, hostage situations.* Retrieved by http://www.govtech.com/public-safety/Los-Angeles-Police-Use-Drones-to-Respond-to-Bomb-Threats-Hostage-Situations.html

Rapid rise in mass school shootings in the United States, study shows. (2018, April 18). Retrieved by https://www.sciencedaily.com/releases/2018/04/180419131025.htm

Reagan, J. (2016, June 30). *Drones save lives of missing people*. Retrieved by https://dronelife.com/2016/06/30/drones-save-lives-missing-people/

Rudisil, S. (2016). Law enforcement rolls out drones: What will be the limitations the policy makers and the public impose? *Journal of California Law Enforcement, 50*(2), 12-18.

Smith, C. (2017, October 18). *Drone technology helping law enforcement respond to active shooter situation.* Retrieved by https://www.nbcdfw.com/news/local/Drone-Technology-Helping-Law-Enforcement-Respond-to-Active-Shooter-Situation-451547663.html

Templeton, G. (2017, April 17). *Report: American cops are buying drones like crazy.* Retrieved by https://inverse.com/article/30193-police-department-drone-bard-college

Uleski, M. (2017, April 6). The Top 6 Reasons Police UAV Programs Fail Retrieved by https://www.dartdrones.com/blog/top-police-uav-fails/

Young, J. (2017, March 25). *Police drones: 2017 and the future.* Retrieved by http://www.droneguru.net/?s=police+drones+2017+future