



# Utilizing Drones

## For Situational Awareness During Adversarial Crises

BY TRAVIS NORTON

The proliferation of law enforcement drones, or Unmanned Aircraft Systems (UAS) as termed by the Federal Aviation Administration (FAA), is generating new ways to exploit the technology for use in different aspects of policing. UAS use by law enforcement has sparked debate among privacy groups about their potential abuse. There is less discussion about how they can increase community safety and inform decision-making during critical incidents. Specifically, can they decrease the amount of time it takes to gain situational awareness<sup>1</sup> during a crisis, such as an active shooter event?

Despite public concerns, many agencies across the nation have created successful UAS programs. One department in Southern California is answering radio calls with UAS while SWAT teams across the country are using them to clear the inside of struc-

tures before entry. These are just two of the novel ways in which agencies are using UAS technology to increase safety for all concerned. Law enforcement should continue developing new uses for UAS in adversarial conflicts such as hostage situations, officer rescues, and active shooter events. Specifically, how can this technology lessen the time it takes to gain situational awareness, thereby increasing the tempo of an operation?

### OFFICER AMBUSHES DURING ACTIVE SHOOTER EVENTS

In recent active shooter events, first arriving officers have been ambushed by suspects when they attempted to enter or were arriving at the crisis site. In a California incident, an active shooter attacked officers while they tried to enter the location through the primary entrance. In another incident, a suspect shot at

arriving officers from the main entry point of the building into a large parking area. Later in the same event, the suspect ambushed SWAT officers searching a large warehouse.

Several other recent incidents have involved officer rescues conducted with an armored response vehicle (ARV). In one officer rescue, there were questions about why the rescue took so long to complete. The answer lies in gaining situational awareness. Imagine arriving at an officer down incident with your ARV and having little to no knowledge of several critical pieces of intelligence. They include the downed officer's location, what the backyard of the target location looks like, obstacles in the way of your ARV, where the suspect is firing from, and the location of other officers. Additionally, trying to determine if you can navigate a guy-wire<sup>2</sup> that is an obstacle for the ARV, all while try-

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## LAW ENFORCEMENT SHOULD CONTINUE DEVELOPING NEW USES FOR UAS IN ADVERSARIAL CONFLICTS SUCH AS HOSTAGE SITUATIONS, OFFICER RESCUES, AND ACTIVE SHOOTER EVENTS.

ing to formulate a hasty rescue plan. Anyone would be challenged to conduct a rescue under such trying and emotional circumstances. The more complex and challenging a situation, the harder situational awareness is to gain.

In any of the circumstances mentioned above, would a hastily deployed UAS provide vital intelligence to inform crisis decision-making and reduce uncertainty? While UAS is not a panacea, they could contribute the following to assist with planning:

- An overhead view of ingress and egress routes.
- Identify obstacles in the way of the ARV and officers.
- The suspect's location.
- The downed officer's or citizen's location

Obtaining a comprehensive view of the tactical problem provides valuable intelligence that would otherwise not be available. Additionally, the intelligence provided from the UAS could speed up the decision-making process and formulate plans more quickly. Lessening the time it takes to gain critical intelligence is crucial when lives are on the line.

### HASTY/EXIGENT UAS DEPLOYMENT

Deploying a UAS during an adversarial crisis is context dependent. If there is still active gunfire inside the location, or there are other mitigating circumstances, a UAS is not going to provide any benefit. However, a UAS could help thwart an ambush in some situations.

One example is an incident where the shooting has stopped, the location of the suspect is unknown, and the suspect is believed to be loose inside the crisis site. The use of the UAS is also dependent on the location the incident occurs. As

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previously mentioned, it could also help during an officer/citizen rescue where uncertainty is plaguing rescue attempts. The following are suggestions for consideration:

- Equip your ARV with a UAS that has a dedicated LCD monitor. Not everyone has a cell phone that is capable of pairing with the UAS for use.
- Equip supervisor and selected patrol vehicles with a UAS that is capable of indoor and outdoor use. A UAS capable of indoor use takes practice, and there needs to be a robust training program in place. This technology is continuously being developed and refined and hopefully will be more user-friendly in the future.
- A tethered UAS is capable of being on station for up to 10 hours and provides a command post with situational awareness on the exterior of a crisis site. These “fire and forget” drones are not human resource intensive to operate and are easy to deploy. Outfit your department’s watch commander vehicles with these systems.

## LEGAL CONSIDERATIONS

The FAA is responsible for air traffic in the United States, and we must respect their federal authority when implementing a UAS program. Law enforcement agencies have two options as it pertains to UAS operations, which are:

- Part 107 – UAS pilots need to take the FAA’s Remote Pilot Knowledge Test (also called the Part 107 test) and obtain a Remote Pilot Certificate, as well as comply with other requirements listed in the Part 107 rule. A department would need to apply for a special waiver for activities

such as flying above 400 feet or flying in controlled airspace. However, in some cases, it may be an issue.

- Part 91 Certification of Authorization (COA) – Obtaining a COA is a long process but gives your agency greater flexibility than Part 107 rules prohibit, such as flying at night. A COA gives your agency permission to fly over people during a live safety event routinely. Also, your agency can request other special provisions to be listed in your COA, depending on the specific needs of an agency’s operations. Under a COA, a department can self-certify UAS pilots, but proper documentation demonstrating a well-established training program is required.

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## IN THE FUTURE, IT IS CONCEIVABLE THAT UAS CAN BE FIRST RESPONDERS TO ACTIVE SHOOTER INCIDENTS.

This article has outlined the exigent use of UAS in adversarial crises, which means an FAA licensed UAS pilot might not be on duty during the initial stages of the event. Because we are arriving with whoever is on-duty with whatever equipment is available, officers on the scene would deploy a drone. An unlicensed UAS operator running a drone could violate a COA or Part 107. Department UAS program coordinators should speak with their local FAA representative about the ramifications of utilizing UAS with unlicensed pilots during an in-extremis

event. This specific situation is yet unexplored, and there is an urgent need to solve this particular friction point.

## THE FUTURE – SCIENCE FICTION OR REALITY?

In the future, it is conceivable that UAS can be first responders to active shooter incidents. Imagine a time when businesses and schools have active shooter UAS technology. When an active shooter incident occurs at a location, a gunshot detection system senses the gunfire.

A small team of UAS then deploys from a nest inside the crisis site to locate the shooter. They find the shooter and transmit vital intelligence to responding officers. Responding units are provided with the suspect’s location in the building and his picture while facial recognition works to identify him. A tethered UAS deploys from the top of the business providing the arriving incident commander with situational awareness outside the crisis site, enabling a more coordinated response. Arriving officers are escorted inside the building by a UAS where they confront the shooter and stop the killing.

When police and fire/rescue begin the “stop the dying phase,” police UAS work in conjunction with fire/rescue UAS to identify victims’ medical status. They also use “through the wall” human detection technology to find any trapped victims. Fire/rescue UAS gather victim vitals, which they use to begin triage before even entering the building. While this scenario might seem far-fetched, some of this technology already exists. Nests of UAS to support first responders are

already being explored. Our future response to critical incidents can be enhanced with the help of technology, such as UAS.

## CONCLUSION

There is an urgent need for law enforcement to exploit UAS technology that decreases the time it takes to gain situational awareness during specific critical incidents. Outfitting police and armored vehicles with a UAS capable of quick deployment during exigent circumstances is one way to obtain information and intelligence quickly. Unfortunately, with current laws and restrictions, UAS technology might not be available to a first responder where it is needed most. During situations where UAS assists in gathering intelligence, hasty plans can be formulated faster, in turn, speeding up the tempo of the operation and potentially save lives.

## ENDNOTES

1. Situational awareness is a concept that describes a person's knowledge and understanding of the circumstances, surroundings, and influences about an unfolding situation.
2. A guy-wire is a tensioned cable used to add stability to a free-standing structure such as a utility pole.

## ABOUT THE AUTHOR

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**THERE IS AN URGENT NEED FOR LAW ENFORCEMENT TO EXPLOIT UAS TECHNOLOGY THAT DECREASES THE TIME IT TAKES TO GAIN SITUATIONAL AWARENESS DURING SPECIFIC CRITICAL INCIDENTS.**

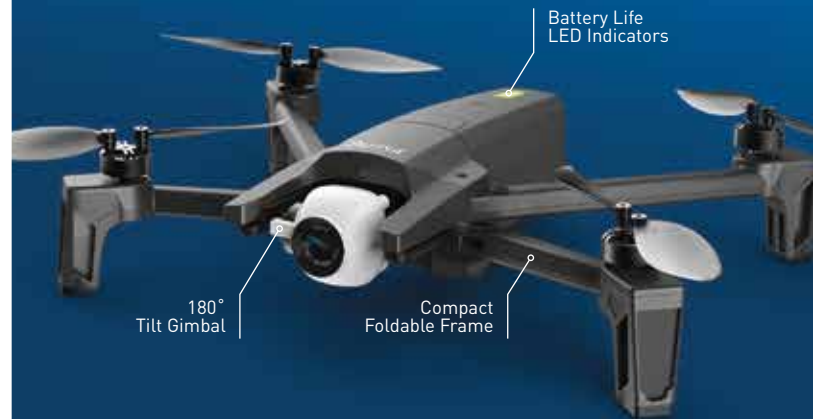
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