DRONES FOR POLICE, FIRE & OTHER EMERGENCY RESPONDERS
DRONES IN THE FIELD

POLICE AND LAW ENFORCEMENT DRONES
INTERESTING FACTS

347 → 518%

U.S. AGENCIES USING DRONES

35% SHERIFF (121)
28% POLICE (56)
20% FIRE (69)
12% CITY OR COUNTY (43)
5% STATE (18)

GROWTH IN DRONE USE OVER 24 MONTHS

Source: Bard College

Number of Departments

<table>
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<tr>
<th>Years</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017 (Until March)</th>
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HOW ARE DRONES BEING USED BY LAW ENFORCEMENT PROFESSIONALS TODAY?
1. Search and Rescue

When it comes to search and rescue missions, seconds can mean life or death and rescue teams cannot afford mistakes. Drones can cover large sections of land in a short amount of time, and can easily spot human subjects when equipped with thermal cameras (even at night!).
2. Traffic Collision Reconstruction

The combination of drones and 3D mapping software allows investigators to quickly and efficiently create a 3D rendering of the actual crash site instead of manually recreating from ground photos and painstaking manual measurements.

Original photograph

Location of evidence marked

Evidence transferred to scene drawing

Scene drawing with vehicle positions
3. Investigate Active Shooter/Suspects

Drones enable law enforcement officers to investigate suspects and locate active shooters that are believed to be “armed and dangerous” while maintaining a safe distance. This gives officers real-time, actionable intel to use to assess the threat while formulating a strategy for their approach.

https://www.dronefly.com/
4. Crime Scene Analysis

Investigators can use the same mapping systems they use for traffic collision reconstruction to map out other crime scenes. The navigable and measurable map gives an accurate view of the actual crime scene instead of an animated representation, allowing details to be noticed well after the initial analysis is complete.
5. Surveillance

Drones offer a new point of view for scouting areas that police officers may otherwise have no favorable position to conduct a standard surveillance operation without being spotted. In these situations, flying a drone offers the best opportunity to get a detailed view of the area without compromising safety.

https://www.dronefly.com/
6. Crowd Monitoring

In situations such as large gatherings, concerts, or protests, drones allow law enforcement to see deep into the crowd. If someone commits a crime and runs into the mass of people, this aerial perspective allows the Police to track the suspect through the crowd without endangering any innocent bystanders. The same perspective also allows Police to see if there is anyone in the crowd that may need assistance and is otherwise incapable of notifying authorities.

https://www.dronefly.com/
In a study from the “Center For The Study Of The Drone” (Bard College) revealed that some departments owned two or more different drone models. The most popular models among law enforcement and public safety agencies are drones made by DJI such as the Inspire 1 and Matrice Series.

**TOP LAW ENFORCEMENT DRONE PACKAGES FOR 2017**

- **Inspire 1 V2.0 + Zenmuse XT**
  - Up to 23 minutes of flight time
  - Compact and portable system
  - Dual Operator Control
  - Lower Cost

- **Matrice 100 + Zenmuse XT + Z30**
  - Flight time of up to 35 minutes
  - Compatible with many payloads
  - Additional expansion bays
  - Dual Battery Compartments

- **Matrice 210 RTK-G Zenmuse XT + Z30 Zoom**
  - Extended flight time (up to 38 minutes)
  - Dual Payload
  - IP43 Water Resistant
  - Advanced obstacle avoidance

https://www.dronefly.com/
POLICE DRONE CAMERAS

Aerial Zoom Cameras
Cameras such as the Zenmuse Z30 offer additional safety by keeping the aircraft at a distance from whatever threat is being investigated, and GPS for easy location reference and crime scene measurement.

Thermal Imaging Cameras
Thermal imaging is far more than night vision, it sees heat signatures. When combined with thermal cameras such as Zenmuse XT, drones can now be the "eyes in the dark" of search and rescue teams which can help them complete their mission even at night.
In the coming years, and with continued commercialization, drones will become more widely used in law enforcement to provide beneficial assistance, real-time situational awareness, and increase safety for communities, police officers, and other first responders.

References

http://dronecenter.bard.edu/drones-at-home/
https://www.youtube.com/watch?v=Gkj2NJQHys
http://www.dslrpros.com/sar-drones.html
http://www.dslrpros.com/dslrpros-blog/drones-for-police/
EXAMPLES OF UAS USED BY LAW ENFORCEMENT
AEROVIRONMENT QUBE
AUTEL X-STAR
DJI PHANTOM
DJI MATRICE 200 SERIES - M210
DJI MATRICE 200 SERIES – M210 WITH 3 DIFFERENT GIMBALS FORMATS ACCESSIBLE
DRAGANFLYER 4XP
INTEL FALCON 8+
YUNEEC TYPHOON H
ADDITIONAL SPECIAL EQUIPMENT/ACCESSORIES FOR UAS
DJI ZENMUSE XT CAMERA (FLIR)
COSTS OF IMPLEMENTING A UAS

• Helicopter Costs:
  ✓ $1.8 Million or more initial cost
  ✓ $575.00 or more per hour to operate (crew, fuel and insurance)

• sUAS Costs:
  ✓ $30,000.00 average initial cost (can be more can be less)
  ✓ $20.00 per hour to operate (operator/crew, battery power and insurance)
• 1/3 of the missions of a Helicopter

• Less than 2% of the purchase costs

• Less than 4% of the operating costs
WATER RESCUE / DISASTER RESPONSE
SOUTH CADDIO PARISH AND MONROE, LOUISIANA UAS CAPTURES DEVASTATION OF THE STORMS THAT STRUCK THE BAYOU STATE, 11/MARCH
FIRE OVER WATCH FOR HOT SPOTS IN TRAILER FIRE (CAMERA DJI XT FLIR)
How to contact us

JAMES (DOUG) DANIELS
Senior Law Enforcement Training Officer
Remote Pilot-In -Command
Ohio Peace Officer Training Academy
Direct Line: (740) 845-6304
Email: james.daniels@ohioattorneygeneral.gov