

Drones Decipher Crash Causes



Drone use continues to grow, saving time and money but raising privacy concerns.

BY JENNI BERGAL



When police investigators tried to figure out what caused a multivehicle crash that killed an elderly woman in Morton, Ill., last summer, they looked to the sky for help.

Like a growing number of police agencies throughout the country, the sheriff's office in Tazewell County relied on a drone to quickly take photographs of the scene from on high to help investigators reconstruct the crash.

"It's about a hundred times more detailed than what we could do with people taking the measurements," Chief Deputy Jeff Lower says. "And it means that there's much less time for the road to be closed and traffic to be backed up."

For decades, police investigators at crash scenes used chalk marks, tape measures and roller-wheels to record measurements and skid marks to help them assess what happened. More recently, many have used a laser scanning tool to map the scene. But often, those measurements can take hours, during which lanes may need to be shut down or the road closed entirely, putting emergency responders and crash investi-

gators in harm's way near traffic whizzing past.

Now, more police agencies are turning to drones, unmanned aerial vehicles, to do that work. Remote pilots send up the drones, which take high-resolution photos that are fed into a computer and run through software. That creates 3D models that piece everything together for investigators.

And while privacy and civil rights advocates strongly oppose law enforcement using drones for mass surveillance, such as at a protest rally, or for gathering criminal evidence without a warrant, they generally are not as concerned when it comes to car crashes.

"Filming a traffic accident overhead to get a better view, if it's strictly limited to that purpose, is not the sort of thing that we would necessarily object to," says Chad Marlow, a senior counsel at the American Civil Liberties Union in New York.

Jeramie D. Scott, national security counsel for the Electronic Privacy Information Center, a Washington, D.C.-based nonprofit research group, agreed that it is "less likely" his group would be concerned about using drones for crash reconstruction, as long as there wasn't some type of surveillance involved in collecting information about individuals.

"The risk," Scott says, "is that without rules protecting privacy, law enforcement will use drones to conduct surveillance, including general surveillance of groups."

Jenni Bergal is a writer for Stateline, an initiative of The Pew Charitable Trusts. This article was first published on Aug. 6, 2018. NCSL's Ann Kitch contributed to this article.



Drones Deliver

At least 35 of the 44 state transportation departments that responded to a March 2018 survey by the American Association of State Highway and Transportation Officials are using drones for a wide range of purposes.

In 20 states (Alaska, Arizona, Colorado, Delaware, Georgia, Iowa, Maine, Mississippi, Montana, Nebraska, Nevada, New Jersey, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Tennessee, Utah and West Virginia), they are most frequently used to take photos and videos of highway construction projects.

According to the survey:

- 14 states use drones for surveying.
- 12 for public education and outreach.
- 10 for bridge inspections.
- Eight for emergency response.
- Six for pavement inspections.
- Five for scientific research.
- Two for daily traffic control and monitoring.
- One to inspect high-mast light poles.

Twenty-three states have established comprehensive drone policies that cover the acquisition, operation, airspace restrictions and the training and permitting of drones and drone pilots. Twenty-seven of the states reported that they have added full-time staff to operate and maintain their drone fleets.

All state transportation departments deploying drones must either follow the Federal Aviation Administration's Part 107 Rule or obtain a public certificate of waiver or authorization from the FAA.



—Ann Kitch, NCSL transportation research analyst

Police Drone Use Grows

State and local emergency response agencies use drones in a variety of ways, from tracking wildfires to search and rescue missions.

At least 910 state and local police, fire and emergency services agencies have drones, according to an estimate by the Center for the Study of the Drone at Bard College in New York. And those numbers have skyrocketed—up 82 percent from 2016 to 2017. About two-thirds of the agencies with drones are in law enforcement.

While the study doesn't break out how many police agencies use drones specifically for crash reconstruction, Dan Gettinger, co-director at the center, says the idea is spreading.

Lower, of the Tazewell sheriff's office, says his department started using drones about a year ago for reconstructing accidents, and has deployed them in six crashes. It has spent about \$15,000 for the program, including training.

In the recent crash that killed the elderly woman, Lower said it took only 45 minutes to gather information using a drone, rather than the three hours it would have taken on the ground. The woman's car hit the rear of a semitrailer stopped at a light and the side of another vehicle nearby. She died at the scene.

Last year, North Carolina's transportation department and highway patrol conducted a real-life drone study using a simulated two-car crash. It took the reconstruction team an hour and 51 minutes to collect the data using a laser scanner. It took 25 minutes using drones.

Using drones for crash reconstruction also can reduce staff time, some officials say.

Maine state police bought three drones for reconstruction last year and have used them more than 30 times to investigate crashes. They paid about \$40,000 for the drones, software and training. "We've probably saved twice that in overtime alone," says Lt. Bruce Scott, the traffic safety unit's commander.

Drone Controversy

Drones can be controversial, and many states have passed legislation to regulate or restrict their use.

At least 19 states require law enforcement agencies to get search warrants to use drones for surveillance or conducting a search, but a few of those states have specifically exempted crash reconstruction efforts from requiring a warrant. In Maine,

for example, state police worked with legislators to make sure the exemption was included in drone legislation enacted in 2015, according to Maine State Police Sgt. Darren Foster, who oversees his agency's drone program.

In Virginia, the Stafford County Sheriff's Office wanted to start a drone crash reconstruction program but was hampered by a state law requiring police to get a warrant to use a drone except in certain circumstances, such as Amber Alerts for missing children.

Earlier this year, the sheriff's office contacted Delegate Bob Thomas (R), who introduced a bill allowing drones for crash reconstruction without a warrant.

The legislature unanimously passed the measure, which was signed into law by Governor Ralph Northam (D) in March. It went into effect in July.

While the program has just started, Stafford County Capt. Ben Worcester says he expects it to revolutionize the way investigators capture crash scene evidence and help protect emergency workers and the public.

"The benefits are undeniable," he says. 🚁