Can we all agree? What exactly is a “drone”? A couple months back LET editor Jonathan Kozlowski none-too-subtly revealed his disdain for the term “drone” (a word so freely and at times ominously tossed around these days) in his February 25 blog "I hate drones" on Officer.com. He reflected on the media hype surrounding a term that is often over-simplified or simply misunderstood (Note, Kozlowski hates the word "drone", not drone technology itself—an important distinction).

The FAA classifies “unmanned aerial systems (UAS)” as the unmanned aircraft (UA) and all of its associated support equipment, including control station, data links, telemetry, communications and navigation equipment, etc., necessary to operate the aircraft. The “UA” is the flying portion of the system, flown by a pilot via ground control system, or autonomously through use of an onboard computer, communication links and any additional equipment that is necessary to safely operate the craft. “Strictly speaking, a drone is simply a remotely controlled aircraft or boat, if you go by the Oxford English Dictionary or Webster’s definitions,” says Matthew Schroyer, founder and president of DroneJournalism.org. Schroyer uses his engineering and data journalism background (a National Science Foundation grant to improve STEM education. He argues drone technology has existed for nearly 120 years, but the word “drone” has only been verballized since the interwar period, when the Royal Air Force began converting the Queen Bee manned aircraft into unmanned aerial target for trainees. The wood biplanes took to the sky in 1935 and bore either wheels or floats. It was radio-controlled and could fly as high as 17,000 feet and travel a maximum 300 miles at more than 100 miles per hour. "Queen Bee" was retired from the RAF in 1947.

In his work at the University of Illinois Schroyer teaches students how to design, build, and deploy small unmanned aircraft systems. “There’s nothing in the etymology that suggests drones can only be weapons, and in fact, the majority of research and development in this area involves removing humans from dangerous situations,” he says. Indeed, that is how a number of drones are used today. The lofty unmanned systems are also useful for gathering information and conducting research—without putting a single body in the sky.

Circling around regulation Even drone use that clearly benefits public safety may be called into question. Last March the FAA directed Eugene Robinson and the Texas EquuSearch Mounted Search and Recovery, RPSearch Services, Inc., to ground its radio-control model aircraft, deeming the operation "illegal". On its website, the FAA prohibits and/or regulates the use of UAS for commercial purposes. The technology is further treated like manned aerial vehicles in that both aircraft and pilot must be certified. The administration states, “To date, only two UAS models (the Scan Eagle and Aerovironment’s Puma) have been certified for commercial use, and they are only authorized to fly in the Arctic. Other universities (federal, state and local governments and public universities) may apply for a Certificate of Waiver or Authorization (COA).” The FAA reviewer approves UAS operations over densely-populated areas on a case-by-case basis. The Texas search and rescue organization has worked in cooperation with law enforcement agencies across the country to assist in missing person cases since 2005. Their craft, from PR Flight Systems, is basically a model aircraft with camera onboard. It can cover a square mile in ten minutes and provides a stitched-together digital map of the area. Texas EquuSearch claims to have found more than 300 people alive, and in other cases have found remains. The service also proves useful for preserving evidence.

Special Council Brendan Schulman, head of the unmanned aircraft systems practice group at the law firm of Kramer Levin in New York, defended Texas EquuSearch. “We argued it’s not illegal to use a model aircraft for beneficial purpose, because that exact same operation, if it was done for recreational purpose, would be fine. I’m puzzled and I don’t understand why the agency would say why either the safety or approval framework for that operation changes when you want to do it for a beneficial purpose, especially since these people are not paid.” Texas EquuSearch's drone operators are not paid, nor are families charged for the service. Schulman argues FAA has long delayed in making up rules for commercial or civilian applications. Government agencies, like law enforcement, must seek approval to use this technology—a process that may be easier said than done, as seeking limited authorization from the FAA can be a time-consuming, involved process.

In another recent case Schulman (who also happens to be a hobby drone builder and model airplane flyer) defended businessman Rafael Pirker. Pirker fought a $10,000 fine from the FAA when he used a remotely operated 56-inch foam glider to take aerial video for an advertisement for the University of Virginia Medical Center. This time the case was dismissed. The judge agreed the FAA had overreached by ascribing regular aircraft regulations to model aircraft.

What about ENG (Electronic News Gathering)? News organizations stand to benefit from the use of this tech, too. Not everyone is onboard. “Drones are able to complete some fairly sophisticated camera maneuvering that previously you could only replicate with tracks, cranes and steady cams,” says Schroyer. “What we’re really talking about is giving even indepen-
Managing the data

So you’ve got a UAV. What do you do with the information it gathers? Some companies, such as 2D3 Sensor, are finding ways to help agencies go beyond simple video capture by providing software solutions that turn video data into something smarter—things like area maps, 3D models—even track lines from a vehicle chase. “We can create a very rich, geospatial database of video content that is recorded not only from aerial platforms, but from any camera, really,” says Jon Damush, President and CEO of 2D3 Sensor. When connected with an aerial platform, the vehicle- and onboard sensor-agnostic software can indicate not only where the plane flew and its flight path, but also what camera was connected and where it was pointed for each frame. “When you start to index some of these things as the plane’s flying, you begin to build up a very comprehensive database of aerial imagery,” he says; a database that is searchable down to the individual frame. Additional telemetry data associated with a video or aircraft yields archived information that could potentially provide transparency into police operations, or admissible evidence in court for a sequence of events. The extra data could aid future policing efforts, too. Says Damush, “You could study [the data] over long periods of time to determine the pattern of life in any given area.”

ent journalists the tools to create an immersive news experience.”

Even more than optimal maneuvering, UAVs can provide photographers with data to help guide investigations. They can collect photos of an area, then rectify those photos to produce high-resolution maps and digital elevation models. This data can answer questions like: How much coal ash actually spilled into the river? How large was this chemical spill? How has the ground changed on a week-to-week basis, and does that match the government or industry reports? Mickey Osterreicher, general counsel for the National Press Photographers Association (NPPA) and a reserve deputy sheriff, says two years ago news-gathering drones were a non-issue. Now they’re everywhere. His time in uniform provides him with a unique outlook on the topic, combined with his 40 years’ experience in print and broadcast journalism. According to Osterreicher, electronic news gathering is merely an extension of the right to photograph and record in public.

“It’s something I deal with almost on a daily basis nationally, where photographers are being interfered with, and/or arrested by officers for doing nothing more than being in a public place, photographing and reporting. “It was nice when I was trying to educate journalists and citizens about their First and Fourth Amendment rights, but then I found that it doesn’t really matter if the journalists or citizens know what those rights are if the police don’t understand and respect them.” This year at ILEETA Osterreicher conducted training on journalists’ right to photograph and record. The First Amendment is subject to reasonable time, place and manner restrictions. Osterreicher believes that for the most part, law enforcement needs and wants to have a clearer understanding of drone laws. “I think…a lot of officers labor under the misconception that they can order somebody to stop photographing and recording in a public place.”

He says while it may be reasonable to say something like, “Sir, ma’am, I need you to step back a few feet…” or “Sir, ma’am I need you to get out of the street and up onto the sidewalk so you don’t get hit by a car,” telling someone “Go away” is not a reasonable request. Neither is ordering someone to turn off the camera…and deleting images is a no-no. “We’re constantly seeing time and time again settlements where it’s costing municipalities substantial amounts,” says Osterreicher.

Schoyer adds, “I realize officers may not have received training on how to handle incidents involving small unmanned aircraft, so there is bound to be friction between drone journalists and law enforcement. My grandfather was an Illinois state trooper, and I know the job was tough enough back when drones weren’t an issue. The FAA isn’t going to have drone enforcement officers on the ground in every municipality all over the country to handle this, so law enforcement have to take on yet another responsibility.”

For the most part, journalists are present to observe, not interfere. Osterreicher’s report for the Association of Unmanned Aerial Systems International (AUVSI) “Charting the Course for Use of Small Unmanned Aerial Systems in News Gathering” called attention to a survey developed by NPPA to better understand how media and individual journalists intend to use drones to gather news.

Among other findings, the study revealed photographers rely on both video and photo to tell stories that inform and even bring social change. Seventy-two percent of journalists use sUAS to take moving images, while 55 percent use them to capture stills.

“The technology has steadily evolved from Matthew Brady’s cumbersome camera equipment and horse wagon-drawn darkroom which provided the first visual coverage of the Civil War, to small and sophisticated digital cameras employed to provide live high definition images from almost anywhere in the world,” says Osterreicher. “Images shot from sUAS are but the natural progression of aerial flight and photography. The overall devastation in the aftermath of the 1906 San Francisco earthquake and fire was shot by a resourceful photographer using 17 kites to lift his specially designed, but very heavy camera 2,000 feet over the city.”

UAVs provide a better, safer way to cover accidents, fires, natural disasters and sports. They also offer a unique perspective. One survey respondent stated: “Recently we had authorities burn down a house filled with explosives. A drone would have helped us get images of action going on at the scene and the fire itself.”

Uncertainty fuels costly delays

Currently over a dozen states have passed legislation that restricts drone use. Virginia put a moratorium on the use of the technology by any state agency (running through 2015), and in April Wisconsin State Senate passed a bill restricting law enforcement drone use for Osterreicher, outlawing deployment of a drone capable of making video or audio recording in areas where people have a reasonable expectation of privacy. Many of the statutes that have either
The evidence has been gathered in violation of suppression of evidence when in a more reasoned way. We already have legal doctrines concerning suppression of evidence when in a more reasoned way. and I think there should be a more effectively, that should be a good thing, and I think there should be a way for us to address privacy concerns in a more reasoned way. We already have legal doctrines concerning suppression of evidence when in a more reasoned way.

They’re getting very small; things that you can carry in a backpack...a very useful for law enforcement who need portability and to get a quick look at an unfolding situation, “ says UAS Attorney Brendan Schulman. “That’s the kind of tech that’s going to be very useful”.

The LA TIMES reported Seattle PD gifted LAPD a Draganflyer X6, a three-foot wide craft equipped with a camera, video camera and infrared night vision. LAPD announced it would inform the public prior to its use for situations involving barricaded suspects and hostages, should police need to see into a building and decide how to proceed. The article mentioned the agency intentionally avoided using the word “drone” to describe its new purchase.

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Flying blind

Drone regulation is a work in progress, and everyone’s got an opinion. A FAA representative at the second annual SUAS Business Expo in San Francisco told audiences there might be exemptions in the near future for “low-risk” applications such as precision agriculture, filmmaking, and industrial and power-line inspections. The focus being on applications that reduce the number of people performing risky work in helicopters or atop ladders. These operations also happen in relatively controlled environments.

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Potent portables

More law enforcement agencies are researching and selecting UAVs for use on patrol. At this year’s AUVSI expo at the Orange County Convention Center in Orlando exhibitors displayed aircraft that is smaller, smarter and more portable than ever.

Schulman believes restrictive laws are a form of discrimination against “People are either misunderstanding what the tech is, or they’re intimidated because people call them “drones,” and as a result we have some laws, either already on the books or being proposed, that would make it burdensome or discourage agencies from using the tech. To me that’s a cost to the taxpayer, because if you’re a PD and you can accomplish part of your job using tech more efficiently or more effectively, that should be a good thing, and I think there should be a way for us to address privacy concerns in a more reasoned way.

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The truth is, an open interpretation of tech laws as they pertain to “a reasonable expectation of privacy” leads to lawsuits and more taxpayer money tied up in courtrooms. This is true, too for data collected with body worn video, security cameras, smartphones, you name it...hence cases where citizens have argued—and won—the right to record video and audio of public officials in a public place (Glik v. Cunniffe settled in Boston at $172,000; or Sharp v. the City of Baltimore PD, settled for $200,000).

Flying blind

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