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# Behind the Lines: Law Enforcement Operators Weigh in on sUAS

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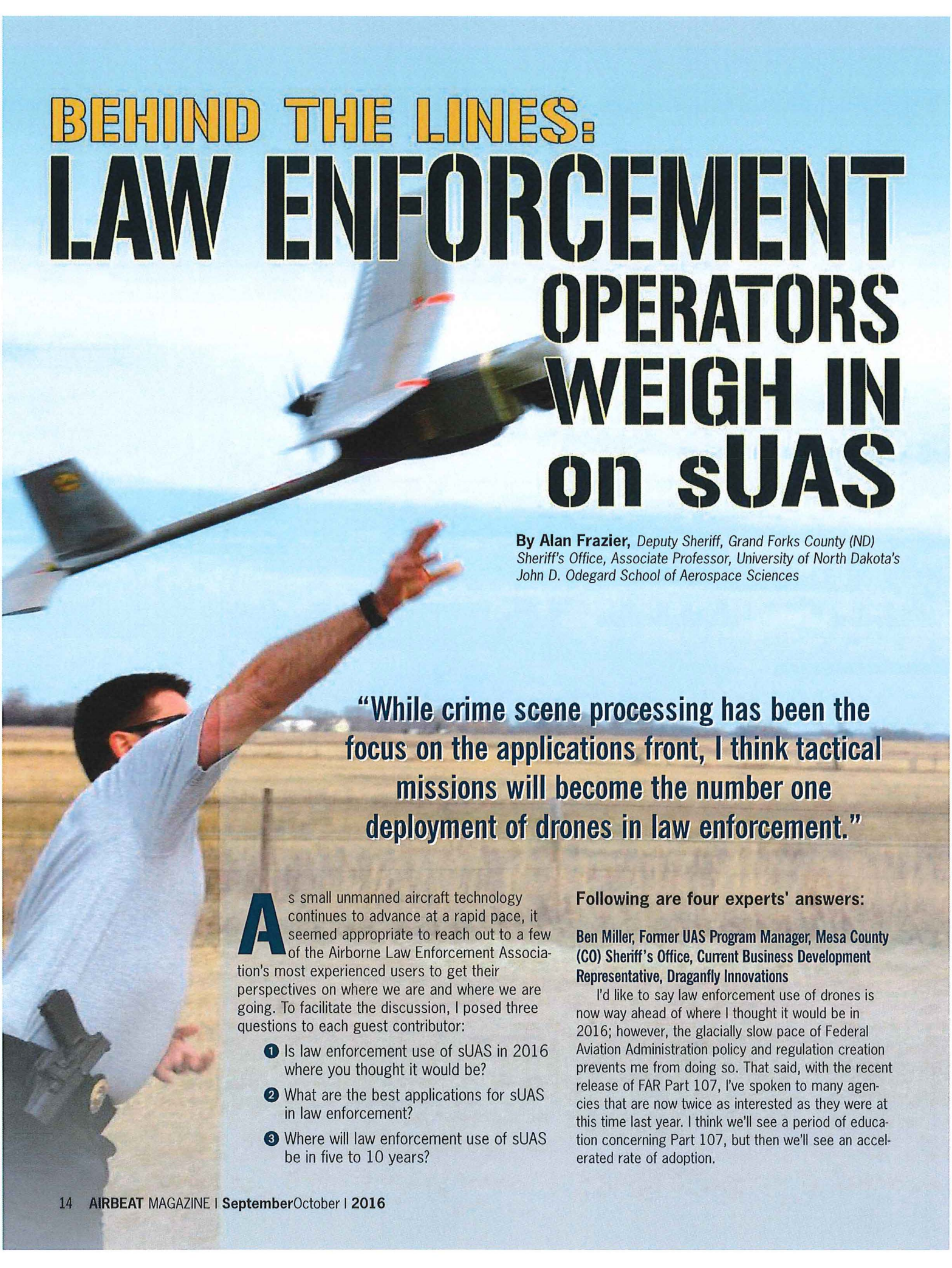
# BEHIND THE LINES:
# LAW ENFORCEMENT OPERATORS WEIGH IN on sUAS

**By Alan Frazier,** *Deputy Sheriff, Grand Forks County (ND) Sheriff's Office, Associate Professor, University of North Dakota's John D. Odegard School of Aerospace Sciences*



**"While crime scene processing has been the focus on the applications front, I think tactical missions will become the number one deployment of drones in law enforcement."**

As small unmanned aircraft technology continues to advance at a rapid pace, it seemed appropriate to reach out to a few of the Airborne Law Enforcement Association's most experienced users to get their perspectives on where we are and where we are going. To facilitate the discussion, I posed three questions to each guest contributor:

1. Is law enforcement use of sUAS in 2016 where you thought it would be?
2. What are the best applications for sUAS in law enforcement?
3. Where will law enforcement use of sUAS be in five to 10 years?

**Following are four experts' answers:**

**Ben Miller, Former UAS Program Manager, Mesa County (CO) Sheriff's Office, Current Business Development Representative, Draganfly Innovations**

I'd like to say law enforcement use of drones is now way ahead of where I thought it would be in 2016; however, the glacially slow pace of Federal Aviation Administration policy and regulation creation prevents me from doing so. That said, with the recent release of FAR Part 107, I've spoken to many agencies that are now twice as interested as they were at this time last year. I think we'll see a period of education concerning Part 107, but then we'll see an accelerated rate of adoption.

Working in the private sector now, I speak to agencies about drones every day, and they are relieved to hear Part 107 will release the burden of permissions from the FAA and the associated paperwork. And, yes, I now call them drones as opposed to UAV or UAS. I don't see the term related to the Predator drone being used overseas now, so I think the word comes with much less PR risk. Today, if you Google the word drone, most hits and images are that of a small white "quad."

In the future, more agencies will adopt drones because of easier rules, but most agencies still struggle with the high price tags. The alternative to a high price—a low quality aircraft—doesn't provide the robust solution most public safety users need. I've spoken to agencies who have taken the purchasing card to big box electronic stores, and now they realize those systems are not meeting durability and other key requirements of the public safety community.

While crime scene processing has been the focus on the applications front, I think tactical missions will become the number one deployment of drones in law enforcement. That mission is just so much more straightforward, as opposed to the highly technical use at a crime scene. Not only do you have to know how to operate the drone effectively, a user also has to learn how to process the data beyond just the photo and turn it into a deliverable that an investigator or prosecutor can tell the story with.

In the future, as technology, policy and public acceptance begin to match up, agencies will begin to deploy long endurance systems that can respond to in-progress calls from a loiter location in the air. I see drones being launched and recovered once per shift. I see a future where the information from the drone is accessible in each patrol car as necessary. I also see smaller drones being used by officers much more frequently, indoors and in short observation flights—checking rooftops and around corners where the drone will become an extension of the body worn camera.

### Andrew Cohen, Sergeant-Pilot, Miami-Dade (FL) Police Department Aviation Unit

I thought law enforcement would be further along in integrating UAS into operations since we were able to purchase and afford the new technology, and due to recent changes in regulations, I think we will see some growth in UAS use. Unfortunately, many factors have influenced the delay so far, including the regulatory environment, the initial cost of starting a program and, in the beginning, lack of public support and the negative reaction of the public to government use of UAS.

Reduced regulations and clear guidelines for utilization of UAS will encourage more agencies to adopt UAS. The availability of affordable units makes UAS more obtainable by law enforcement agencies. Increased reliability and safety, along with greater endurance, are still important considerations for any law enforcement agency. When these issues are fully addressed, I would anticipate increased usage of UAS by law enforcement.

At the present time, the greatest utilization of UAS is in the area of traffic crash investigations and crime scene management. The UAS are able to do what investigators currently do faster, with less manpower. This equates to lower costs and quicker scene normalization.

In the future, I see UAS being deployed to patrol more populated urban cities on a routine basis and perhaps traditional manned units being augmented by and/or replaced by UAS equipped aviation units. These UAS could be controlled from a central location and directed to calls as needed.

Alternately, I see smaller portable units that are carried by ground units on patrol and deployed on scenes as needed from their police vehicle. Eventually, UAS will be able to communicate and coordinate their response (so called "smart UAS" that can sense and avoid one another and manned aircraft) and will be able to fly in close proximity to one another, reducing the need for visual separation and ATC intervention. I think the reduced acquisition and operating costs will be very attractive to most agencies looking to operate more efficiently.

### Corporal Doug Green, Royal Canadian Mounted Police, Forensic Collision Reconstruction Unit

UAS use has grown very quickly in law enforcement over the past few years. Since 2010 when UAS first came to the forefront in law enforcement and commercial applications, we have seen a large number of agencies start UAS programs.

At the present time in Canada, the use of UAS in law enforcement is mostly in the areas of forensic collision reconstruction (FCR) and forensic identification sections (FIS). Currently, there are over 100 UAS in operation at various FCR and FIS units in Canada.

UAS use in tactical emergency response teams and search and rescue has seen slower growth. This is due to flight time, altitude and line of sight from the operator limitations. As newer technology becomes available to address these issues, there will be more agencies looking to use UAS. UAS will not likely take the place of a conventional fixed-wing or rotary aircraft. UAS are, and should be, considered another tool law enforcement has in its toolbox that can be used if the situation warrants it.

In search and rescue, the use of UAS can only be effective if the search area is small and unlimited by steep terrain and dense ground cover. However, a UAS equipped with camera/FLIR technology can assist search teams by quickly searching large open areas and allowing SAR ground teams to focus on areas the UAS cannot effectively search.

In the next five to 10 years, the use of UAS in law enforcement will increase, but at a slower rate than we have seen. The technology has already been proven in the FCR and FIS applications, but not so much in tactical emergency response and SAR situations. We will see expanded use of UAS in these areas. These broadening of missions will require additional training for UAS operators.

In Canada, we have been very fortunate that the use of UAS in law enforcement was supported by Transport Canada and Naviga-

tion Canada from the start. This was largely due to the fact that the law enforcement community embarked on a course that included a partnership with governing agencies that regulate the airspace. In the past five years of operation, the law enforcement community has proven we can use UAS in day-to-day operations and not interfere with manned air traffic in the national airspace.

### Justin Robinson, UAS Coordinator, City of Murfreesboro (TN)

Looking back to just a few years ago, I can honestly say that I had no expectation that unmanned aircraft would play a significant role in the field of government or law enforcement use. There just wasn't much talk about it in general and very few people attempted to look outside of the box for solutions to problems. However, thanks to the efforts of forward thinking and imaginative individuals around the country, we have begun to see an exponential increase in both UAS use and general acknowledgement of its abilities.

With FAA loosening up on some of its public use regulations and requirements, complemented by the fact that third party businesses are working on streamlining the COA process, we will continue to see a marked increase in government use of unmanned aircraft in the years to come. With unmanned aircraft systems able to offer extremely efficient and cost effective support in missions such as search and rescue, crime scene analysis, special operations and disaster relief, UAS provide an attractive alternative to municipalities that want an aviation support platform but may not be able to afford a manned aircraft unit.

As UAS use continues to grow within the government community over the next five to 10 years, we will see several positive developments. The FAA approval process will become much more streamlined, allowing for easier development of government programs. Unmanned aircraft technology will advance in terms of much longer battery life and support for heavier payloads, as well as a wider variety of specialized camera systems.

## The Small UAS Final Rule: 14 CFR, PART 107

After an eight-year wait, the Federal Aviation Administration released the Final Small Unmanned Aircraft Systems Rule in June 2016. The rule creates a new set of sUAS-specific regulations: 14 CFR, Part 107.

FAA has clearly stated government agencies may choose (on a mission-by-mission basis) to operate in compliance with 14 CFR, Part 107 or operate as a public aircraft in compliance with a certificate of authorization (COA) or waiver. The official position of the Airborne Law Enforcement Association is that agencies should initially comply with and operate pursuant to 14 CFR, Part 107. If Part 107 proves to be too restrictive, agencies should then obtain a COA.

Part 107 includes creation of an FAA "Remote Pilot Certificate." FAA licensed pilots may receive a remote pilot certificate in three steps: 1) Complete FAA's sUAS course found online at www.faasafety.gov. 2) Complete an online airman certificate application on FAA's Integrated Airman Certification and Rating Application (IACRA) site. 3) Have a certified flight instructor or designated pilot examiner verify the applicant has a current biennial flight review and certify that fact by logging into the IACRA site using the unique application number provided by the applicant.

Individuals not currently possessing FAA airman certificates must pass a 60-question knowledge exam administered at an FAA-authorized knowledge test center. Knowledge areas to be tested are listed in FAA Advisory Circular AC 107-2. After successful completion of the knowledge exam, an airman certificate application must be submitted via IACRA or in-person to an FAA Flight Standards District Office. There is no oral or practical exam.

In addition to detailing pilot requirements, 14 CFR, Part 107 states sUAS operations are permitted, daytime only or during civil twilight, if the aircraft has appropriate lighting, below 400 feet AGL in all (except Class A) airspaces. Class G airspace operations do not require any notification of air traffic control. Operations in Class B, C, D and, if associated with an ATC facility, Class E airspace will require coordination with ATC. We are making slow but sure progress in integrating sUAS into our law enforcement toolbox.

## Need UAS Assistance?

From August 2016 until June 2017, Al Frazier will be serving as an sUAS Fellow at ALEA, intended to help members with anything related to public agency use of UAS or agency response to "rogue UAS" calls for service. Frazier will be available to consult via telephone or email or can travel to your location to conduct in-person meetings. In the latter situation, the requesting agency would be responsible for all travel, lodging and subsistence costs. There are no salary or consultation fees. Please feel free to contact Al Frazier at afrazier@aero.und.edu or by phone at (701) 213-8153.