7-1-2013

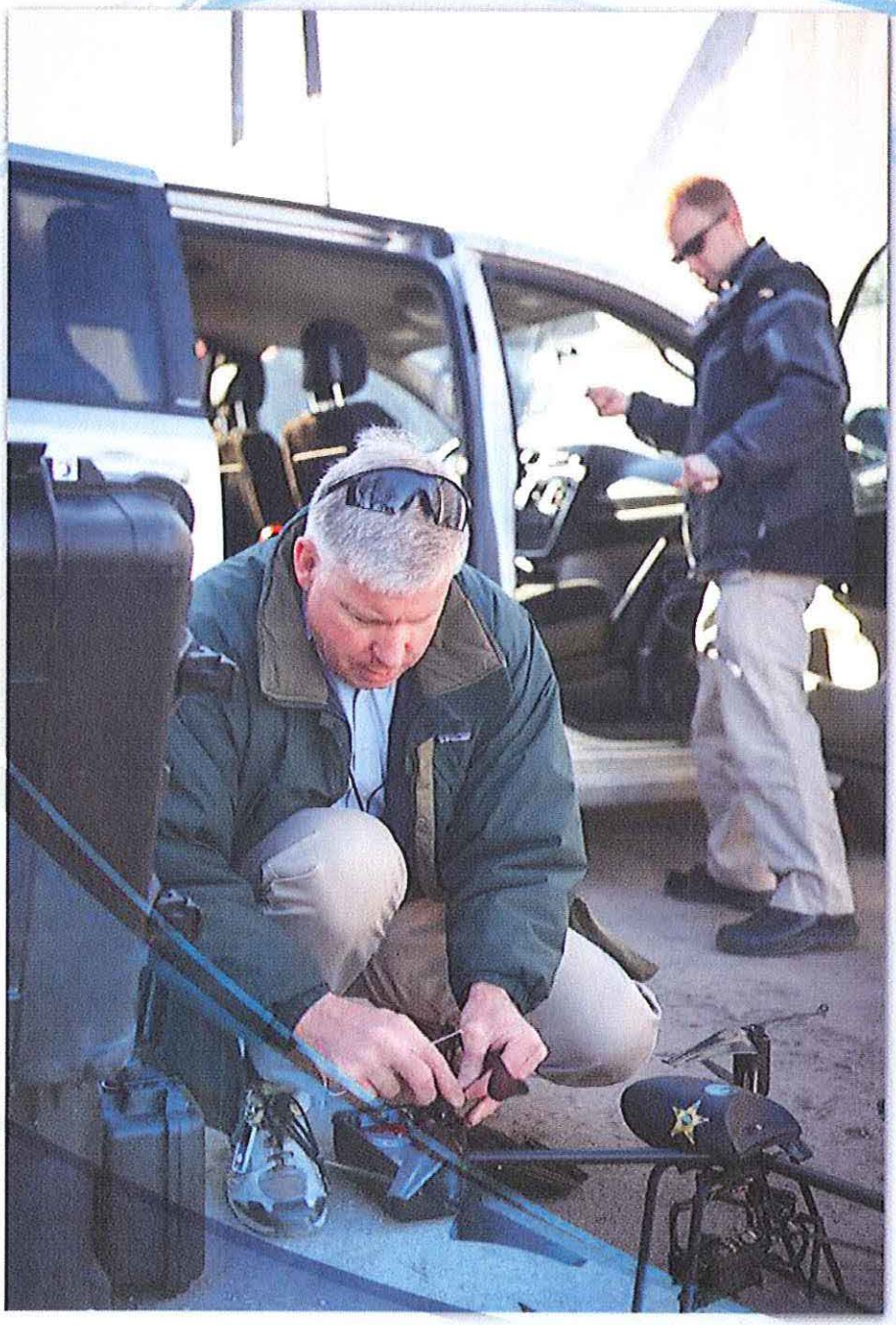
Establishing a UAS Unit

Alan Frazier
University of North Dakota, alan.frazier@UND.edu

Recommended Citation
Frazier, Alan. (2013). Establishing a UAS Unit. Airbeat Magazine, July/August 2013, 32-34.

ESTABLISHING A UAS Unit

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



Legislation against UAS utilization by law enforcement is pending at the federal level, as well as in many states. And that's just one of the things law enforcement agencies must overcome to build their UAS programs.

The adoption and implementation of any new technology, from digital radio systems to electronic control weapons, can bring unexpected challenges. Unmanned aircraft systems (UAS) are no exception.

Small UAS could allow almost any law enforcement agency to gain an airborne perspective during missions as varied as monitoring hazardous materials spills to searching for fleeing criminals. However, the path to accomplishing these missions with UAS is still being pioneered.

The Cost of Medical Clearance

The Federal Aviation Administration appears to be working diligently to integrate UAS into the National Airspace System. Whether this is due to requirements of the *2012 FAA Modernization and Reform Act* or not, the administration is making slow but sure progress. However, many constraints on the use of UAS by public safety agencies still exist. Foremost among these is the prohibition of nighttime UAS operations and the requirement that UAS pilots, and even visual observers, possess FAA second-class medical certificates.

Considering a large percentage of serious law enforcement incidents occur at night, the inability to operate UAS at that time is a major impediment to police uses. What's more, it contradicts most pilots' experience that locating another well-lit aircraft at night is easier than locating aircraft during the day. According to many experts, the utilization of navigation and anti-collision light systems on UAS make their nighttime operation both effective and safe.

According to FAA sources, the requirement for UAS pilots and visual observers to hold second-class medical certificates is a "legacy rule" inspired by the same requirement for air traffic controllers. Presumably, this costly requirement is based on the fact that both air tower controllers and UAS pilots must be able to visually acquire aircraft. However, air traffic controllers must have the ability to visually acquire and continuously monitor multiple aircraft within their airspace, which can extend up to five nautical miles from their observation point. In contrast, UAS pilots and visual observers must monitor a single aircraft, usually within a half-mile of the crew, and the airspace in the proximity of the UAS.

In an ideal situation, a law enforcement agency would have a small group of UAS pilots and a very large team (potentially the entire agency) of visual observers. However, at an average cost of $100 per FAA medical examination, combined with the annual requirement of a second-class medical, the cost is prohibitive. Currently, pilots of light sport aircraft, gliders and lighter-than-air aircraft need only a valid state issued motor vehicle driver's license, which requires a vision acuity exam to obtain.

COAs and NOTAMs

Less limiting but still significant obstacles to effective deployment of UAS are securing a letter from the state's attorney general confirming the agency requesting a certificate of authorization (COA) represents a "political subdivision of the state" and issuing a notice to airmen (NOTAM) prior to UAS operations.

The FAA maintains the relatively recent requirement of securing the letter from the state attorney general is due to "quasi-public" entities applying for COAs. However, county sheriff's departments and municipal police departments are by definition political sub-divisions of their states with very few exceptions. Airborne law enforcement industry advocates would grant FAA should request such a letter if the COA applicant does not clearly represent a city or county, but in all other cases, the requirement borders on obstructionism.

While the NOTAM requirement seems like a reasonable and sensible way of notifying other pilots of UAS operations, some question whether it will inform others of UAS activity. NOTAMS issued by agencies routinely show up in cryptic "pointer NOTAM" formats when pre-flight briefings are received via the direct user access terminal system, a common tool used by pilots to receive weather and NOTAMS. Often, the short NOTAM provides no substantive information other than referring the pilot to a center NOTAM number, which must then be further researched on another website. This, combined with the often dozens of NOTAMS received for a simple local flight, makes it a somewhat ineffective system for alerting pilots of UAS activity.

However, because the COAs currently issued to local law enforcement agencies require a minimum 1000-foot ceiling and 3 square miles of visibility, and UAS crews must keep the aircraft in sight at all times,

NOTAMS are often an unnecessary extra step. UAS pilots and visual observers are easily able to separate their UAS from manned aircraft via the time tested "see and avoid" method.

FAA may in the near future issue the long-awaited notice of proposed rule making related to UAS. Agencies should carefully review the document and provide feedback to FAA in a timely manner. If the airborne law enforcement community fails to actively engage the administration in this process, it will have less of a case if it wants to dispute the final rule.

Insurance, Public Perception and Legislation

Aviation insurers are just beginning to serve the UAS industry. Gaining hull and liability insurance will often involve initiating an education process with your aviation insurance company. Also, be aware that many umbrella liability policies exclude aviation activities. This is a critical aspect of UAS operations that should not be ignored.

Insurance companies aren't the only group that is wary of UAS. The popular media has been largely responsible for inciting negative impressions of law enforcement use of UAS. In order to combat articles about "drones spying on the public," law enforcement agencies should actively involve the public in decision-making regarding the establishment of a UAS unit.

"In order to combat articles about 'drones spying on the public,' law enforcement agencies should actively involve the public in decision-making regarding the establishment of a UAS unit."

Vetting of UAS through already established citizen advisory panels or the establishment of UAS-specific citizen advisory panels are excellent ways of gaining public input. Actively and candidly engaging the media is also an effective way of educating the public regarding the true nature of law enforcement UAS operations. A few informative articles in the local paper and a news segment on local television will help highlight the humanitarian uses of UAS. An open and transparent approach to establishing a UAS unit will not only make the process easier, it is the right thing to do.

Education is also the best tool to guide the federal and state legislators currently crafting laws adverse to law enforcement utilization of UAS. Organizations such as the Association of Unmanned Vehicle Systems International and ALEA are voices of reason in this critical area. However, they cannot do it alone. The entire industry must stay informed regarding pending legislation and take an active role in educating legislators and lobbying for reasonable statutes.

Policies & Procedures

The implementation of any new law enforcement technology should involve careful drafting of policies and procedures related to the technology. Issues such as determining appropriate missions, search/seizure and how it relates to privacy, pilot and visual observer qualifications, pilot and visual observer currency, duty time limits and crew rest requirements, pre-flight inspections and maintenance all should be considered.

The resulting policy document should be dynamic and fluid, with appropriate revisions incorporated as lessons are learned. Law enforcement professionals would never dream of establishing a traditional air support unit without a policies and procedures manual. They should not make the serious mistake of attempting to establish a UAS unit without a similar document.

Most airborne law enforcement officers are rookies when it comes to the use of UAS. However, a few industry members have learned some valuable lessons while establishing their units. Such agencies include the Mesa County (CO) Sheriff's Office, Metro-Dade County (FL) Police Department, Grand Forks County (ND) Sheriff's Department and Arlington (TX) Police Department. Each of these agencies has been gracious in providing advice to other agencies considering UAS units. In addition, ALEA sponsored a UAS Operations Course at its annual conference in July. The 24-hour course provided a "soup to nuts" approach to using UAS in public safety operations.

ABOUT THE AUTHOR: Alan Frazier is a 33-year veteran law enforcement officer. He is a former OIC for the Glendale (CA) Police Department Air Support Unit and currently serves as a part-time Grand Forks County (ND) Deputy Sheriff. Alan is an assistant professor in the University of North Dakota's John D. Odegard School of Aerospace Sciences, where he teaches public safety aviation and helicopter pilot training courses. He coordinates the University's Law Enforcement Unmanned Aircraft Systems Research Project, which operates three small UAS in partnership with the Grand Forks County Sheriff's Department in support of public safety agencies in 16 North Dakota counties. Frazier may be contacted at afrazier@aero.und.edu.