Written Testimony

Of

Benjamin Miller,
Unmanned Aircraft Program Manager,
Mesa County Sheriff's Office

and

Representative of the
Airborne Law Enforcement Association

Before the Committee on the Judiciary
United States Senate

For the Hearing:

"The Future of Drones in America: Law Enforcement and Privacy Considerations"

Good morning Chairman Leahy and members of the Committee. My name is Benjamin Miller, Unmanned Aircraft Program Manager with the Mesa County Sheriff's Office and Representative of the Airborne Law Enforcement Association.

Thank you for inviting me to speak to you about the use of unmanned aircraft in the small Colorado community where I live. The Mesa County Sheriff's Office is a middle sized agency employing approximately 200 people with a patrol team of just over 65 deputies. These deputies serve approximately 175,000 citizens who live inside a 3,300 square mile county. We see a wide range of criminal activity, from petty offenses to major crimes including drug trafficking and homicide.

Today, I speak to you not only on behalf of the Mesa County Sheriff's Office, but on behalf of the Airborne Law Enforcement Association (ALEA). The ALEA has guided our agency through the last four years of research and program genesis in the responsible use of unmanned aircraft. It is over these last four years that we've gained the experience using unmanned aircraft that I'd like to share with you today.

In four years, we have flown 185 hours in just over 40 missions with two small, battery operated unmanned aircraft systems. The Draganflyer X6 is a backpack sized helicopter that can fly for 15 minutes. Our small airplane, called Falcon UAV, can fly for an hour and can fit in the trunk of a car. Both systems are used to carry cameras.

I'd like to share with you today some examples of how we've used these systems to provide you with a picture of how unmanned aircraft are playing a role in our department's commitment to public safety.

My first example occurred last May when an historic church caught fire. We flew the Draganflyer X6, carrying a thermal camera which allowed us to show the hot spots that still needed to be properly extinguished. Firemen were then able to assess the situation and address it accordingly, as these areas were not viewable to the naked eye. We then flew a point and click camera, available at your neighborhood Walmart, about 60 feet in the air and took photos that the arson investigators were able to use to determine which direction the fire had traveled through the building.

My next example occurred a few weeks ago when a 62 year old woman was reported missing. We launched our Falcon UAV in an effort to find this woman. Flying all day, we were able to clear large areas in a short time that would normally take much longer and involve more resources. The woman's body was recovered by ground personnel the following day. The use of Falcon allowed us to more directly apply our resources in this recovery effort.

My final example occurred just days ago, has little to do with law enforcement, but it offers a glimpse as to the real benefit of unmanned aerial systems and that is, affordability. Each year, Mesa County spends nearly ten thousand dollars on a manned aerial survey of our landfill to determine the increase in waste over the previous year. My team and I completed that very same survey with our unmanned aircraft for a mere two hundred dollars in cost to the taxpayer. By flying back and forth over the landfill, using yet another low cost point and click camera,

we were able to combine those photos with geographic reference data and provide a volume to the landfill to an accuracy of 10 cubic centimeters.

This example speaks to the real heart of what we've learned in the last few years. I must admit that when we started this project, I had thoughts of grandeur, chasing criminals across the landscape and solving all my community's public safety problems with state of the art technology seen on the news in Iraq and Afghanistan. Four years later, the reality is the equipment we use and the military "Drones" you see on TV have as much in common as a bicycle and a race car.

While military unmanned aircraft fly for hours and sometimes days at enormous altitudes, we fly just minutes to photograph a crime or accident scene and cannot exceed an hour of flight time, nor can we fly more than 400 feet above the ground we stand on. While military unmanned aircraft are both large in size and cost, our equipment is small and relatively inexpensive. Our equipment does not possess the capability to carry sensors that can read license plates from space or look into your home. Our small unmanned aerial vehicles cannot carry weapons nor do we have a desire to have them do so. Furthermore, we can only fly during daylight conditions and our vehicles must remain within line of sight of the operator.

On the other side of the spectrum from the large "predator-type drones," are the micro unmanned aerial vehicles which you may have seen in some internet and/or TV demonstrations, where numerous vehicles move in complex formations. While we can fearfully contemplate massive swarms of police drones covering the skies, such fears fail to consider simple variables such as wind, making such devices virtually irrelevant for unmanned airborne public safety missions.

Just recently, I was on the Airborne Law Enforcement Association's website and found a 1934 photo of an airborne police officer in a gyrocopter with a telegraph machine strapped to his leg. Aviation and public safety have a long standing relationship. While unmanned aircraft cannot recover a stranded motorist in a swollen river, they can provide an aerial view for a fraction of the cost of manned aviation. I estimate unmanned aircraft can complete 30 percent of the missions of manned aviation for 2 percent of the cost. The Mesa County Sheriff's Office projects direct cost of unmanned flight at just $25 an hour as compared to the cost of manned aviation that can range from $250 to thousands of dollars per hour. It actually costs just one cent to charge a flight battery for either of our systems.

The Airborne Law Enforcement Association embraces the conduct of public safety missions within the specified confines of our nation's laws at all levels of government -- federal, state, and local. We also embrace the introduction of new technologies, such as unmanned aerial systems, that support public safety missions. Additionally, we strongly support the Constitutional process of lawfully obtaining a search warrant when there are specific, articulable grounds to believe that the use of an aircraft, including unmanned aircraft, will intrude upon reasonable expectations of privacy. However, in situations where time is of the essence and no reasonable expectation of privacy exists, we would be opposed to restrictions that would limit the effectiveness of this technology. Further, the introduction of this new technology as a tool of public safety does not transfer to the notion that public safety officers,

by virtue of the use of this new tool, will retract their oaths of office to uphold the laws of this nation, to include the laws that protect the privacy of its citizens.

In almost a century since law enforcement's first use of aviation, numerous judicial opinions have been handed down that uphold the Fourth Amendment's protections against unreasonable searches and seizures.

My agency's use of unmanned aircraft is primarily for search and rescue and crime scene reconstruction, but any tool can be abused. This sad reality is not unique to law enforcement, nor did it begin with unmanned aircraft. While the use of unmanned aircraft requires specific policies and procedures, the handling of sensitive photographs and video has been around law enforcement for many years. I can speak to a strong code of conduct policy inside my own agency that addresses more than just the use of unmanned aircraft. Leadership organizations like the International Association of Chiefs of Police have recently released unmanned aircraft policy guidelines that encourage agencies to adopt non-retention policies (see Exhibit 1), whereby agencies do not keep images that do not qualify as evidence. These guidelines have also been endorsed by the Airborne Law Enforcement Association (see Exhibit 2). It is with their guidance that agencies like mine are developing robust policies, quality training tools and professional unmanned aircraft programs.

In closing, I hope that my testimony has offered a realistic perspective of the many benefits unmanned aircraft can provide to public safety.

Thank you for the opportunity to speak with you today.

Exhibit 1

INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE

AVIATION COMMITTEE

Recommended Guidelines for the use of Unmanned Aircraft

BACKGROUND:

Rapid advances in technology have led to the development and increased use of unmanned aircraft. That technology is now making its way into the hands of law enforcement officers nationwide.

We also live in a culture that is extremely sensitive to the idea of preventing unnecessary government intrusion into any facet of their lives. Personal rights are cherished and legally protected by the Constitution. Despite their proven effectiveness, concerns about privacy threaten to overshadow the benefits this technology promises to bring to public safety. From enhanced officer safety by exposing unseen dangers, to finding those most vulnerable who may have wandered away from their caregivers, the potential benefits are irrefutable. However, privacy concerns are an issue that must be dealt with effectively if a law enforcement agency expects the public to support the use of UA by their police.

The Aviation Committee has been involved in the development of unmanned aircraft policy and regulations for several years. The Committee recommends the following guidelines for use by any law enforcement agency contemplating the use of unmanned aircraft.

DEFINITIONS:

1. **Model Aircraft** - A remote controlled aircraft used by hobbyists, which is manufactured and operated for the purposes of sport, recreation and/or competition.
2. **Unmanned Aircraft (UA)** – An aircraft that is intended to navigate in the air without an on-board pilot. Also called Remote Piloted Aircraft and "drones."
3. **UAS Flight Crewmember** - A pilot, visual observer, payload operator or other person assigned duties for a UAS for the purpose of flight.
4. **Unmanned Aircraft Pilot** - A person exercising control over an unmanned aircraft during flight.

COMMUNITY ENGAGEMENT:

1. Law enforcement agencies desiring to use UA should first determine how they will use this technology, including the costs and benefits to be gained.
2. The agency should then engage their community early in the planning process, including their governing body and civil liberties advocates.
3. The agency should assure the community that it values the protections provided citizens by the U.S. Constitution. Further, the agency will operate the aircraft in full compliance with the mandates of the Constitution, federal, state and local law governing search and seizure.
4. The community should be provided an opportunity to review and comment on agency procedures as they are being drafted. Where appropriate, recommendations should be considered for adoption in the policy.
5. As with the community, the news media should be brought into the process early in its development.

SYSTEM REQUIREMENTS:

1. The UAS should have the ability to capture flight time by individual flight and cumulative over a period of time. The ability to reset the flight time counter should be restricted to a supervisor or administrator.
2. The aircraft itself should be painted in a high visibility paint scheme. This will facilitate line of sight control by the aircraft pilot and allow persons on the ground to monitor the location of the aircraft. This recommendation recognizes that in some cases where officer safety is a concern, such as high risk warrant service, high visibility may not be optimal.

However, most situations of this type are conducted covertly and at night. Further, given the ability to observe a large area from an aerial vantage point, it may not be necessary to fly the aircraft directly over the target location.

3. Equipping the aircraft with weapons of any type is strongly discouraged. Given the current state of the technology, the ability to effectively deploy weapons from a small UA is doubtful. Further, public acceptance of airborne use of force is likewise doubtful and could result in unnecessary community resistance to the program.

4. The use of model aircraft, modified with cameras, or other sensors, is discouraged due to concerns over reliability and safety.

OPERATIONAL PROCEDURES:

1. UA operations require a Certificate of Authorization (CAO) from the Federal Aviation Administration (FAA). A law enforcement agency contemplating the use of UA should contact the FAA early in the planning process to determine the requirements for obtaining a COA.

2. UAS will only be operated by personnel, both pilots and crew members, who have been trained and certified in the operation of the system. All agency personnel with UA responsibilities, including command officers, will be provided training in the policies and procedures governing their use.

3. All flights will be approved by a supervisor and must be for a legitimate public safety mission, training, or demonstration purposes.

4. All flights will be documented on a form designed for that purpose and all flight time shall be accounted for on the form. The reason for the flight and name of the supervisor approving will also be documented.

5. An authorized supervisor/administrator will audit flight documentation at regular intervals. The results of the audit will be documented. Any changes to the flight time counter will be documented.

6. Unauthorized use of a UA will result in strict accountability.

7. Except for those instances where officer safety could be jeopardized, the agency should consider using a “Reverse 911” telephone system to alert those living and working in the vicinity of aircraft operations (if such a system is available). If such a system is not available, the use of patrol car public address systems should be considered. This will not only provide a level of safety should the aircraft make an uncontrolled landing, but citizens may also be able to assist with the incident.

8. Where there are specific and articulable grounds to believe that the UA will collect evidence of criminal wrongdoing and if the UA will intrude upon reasonable expectations of privacy, the agency will secure a search warrant prior to conducting the flight.

IMAGE RETENTION:

1. Unless required as evidence of a crime, as part of an on-going investigation, for training, or required by law, images captured by a UA should not be retained by the agency.

2. Unless exempt by law, retained images should be open for public inspection.

Exhibit 2

AIRBORNE LAW ENFORCEMENT ASSOCIATION

50 Carroll Creek Way, Suite 260 Frederick, MD 21701
Bus (301) 631-2406 Fax (301) 631-2466
www.alea.org

RESOLUTION

IN SUPPORT OF THE

INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE

AVIATION COMMITTEE'S

Recommended Guidelines for the use of Unmanned Aircraft

WHEREAS, the Airborne Law Enforcement Association (ALEA) is a non-profit public benefit corporation of the State of California whose primary purpose is to promote, develop, prepare, disseminate and evaluate information with respect to the safe utilization of aircraft as a tool of law enforcement and airborne law enforcement techniques, equipment, and philosophy as an educational service for members of the organization and the public; and,

WHEREAS, ALEA embraces new technologies, such as Unmanned Aerial Systems (UAS), that support public safety missions, and;

WHEREAS, ALEA embraces the conduct of public safety missions within the specified confines of our nation's laws, federal, state, and local; and

WHEREAS, ALEA recognizes that the introduction of UAS into the national airspace brings with it unique privacy concerns that threaten to overshadow the benefits of this technology;

THEREFORE BE IT RESOLVED THAT the Airborne Law Enforcement Association adopt and promote the International Association of Chiefs of Police Aviation Committee's *Recommended Guidelines for the use of Unmanned Aircraft*.

Adopted by the Airborne Law Enforcement Association Board of Directors on August 29, 2012.

Gregg Weltzman, ALEA Secretary

Kurt Frisz, ALEA President