



Unmanned aerial systems: Consideration of the use of force for law enforcement applications



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ABSTRACT

The contemplation of opening United States airspace to unmanned aerial vehicles (UAVs) has raised no shortage of questions about their appropriate use. Many have raised concerns about their interaction with other aircraft and safety or that they may be used to conduct covert and potentially persistent surveillance on members of the public. UAV use in war-fighting has demonstrated drones' technical capability for tactical use. The use of armed UAVs in United States territory has, in spite of this, received minimal consideration and a general government response that this would not be allowed to occur. This paper suggests that the use of armed UAVs by civilian authorities is appropriate and even desirable in certain circumstances. It considers rules of use for armed UAVs in the context of law enforcement and also discusses the additional considerations applicable to the use of autonomously controlled UAVs.

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1. Introduction

The prospect of opening the United States (US) airspace to unmanned aerial vehicles (UAVs) has caused significant concern. Multiple causes for this concern have been voiced, including potential interference with manned aircraft [1], UAV detectability and avoidability [2], potential privacy violations by members of the public [3] or the government [4], and the drones causing injury [2]. Both technical and policy solutions to these concerns have been considered extensively [5–11].

The concept of armed government UAV operations, however, has received comparatively limited attention. This, perhaps, is due to the fact that many assume that armed UAVs will not be used by the government within US territory. Statements from government leadership [12] have reaffirmed this policy, at least for the present.

The use of armed UAVs, however, may be highly desirable in certain circumstances. UAVs may provide access to areas that cannot be reached by a human officer or they may allow faster access than possible by an officer. They may prevent officers from being placed in jeopardy by an armed suspect or facilitate alternate tactics to respond to such a suspect. Alternately, they could be used to apply excessive force or in circumstances where another technique might allow the apprehension of a suspect uninjured. Misidentification may result in injury to a misidentified subject or someone whose actions seem dangerous, without the context that might be provided by local officer presence. Clearly, both benefits and drawbacks exist. Given this, both an outright ban (or restrictions making access to armed UAVs and the receipt of approval to use them in an emergency situation so slow as to effectively be a ban) and unregulated use of force application by UAVs are problematic.

Like other police tools and powers, UAV use should be regulated and a framework for their appropriate and effective use developed. With suitable policy in place, the use of armed UAVs can be (comparatively) safe and

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effective. This paper presents one such framework for the use of armed UAVs and its evaluation. From the body of knowledge related to armed UAV use in warfare and the use of force by police, decision making considerations relevant to the use of force by armed UAVs are identified and categorized as part of a decision-making framework. The use of teleoperated (i.e., remotely controlled by humans who are able to view video and other data from the craft) UAVs with human staff present, the use of teleoperated UAVs without, or prior to the arrival of, human staff and the special case of autonomously controlled UAVs are considered.

2. Background

An understanding of the technical capabilities of UAVs, current policy surrounding their use and historic doctrine surrounding the use of force aids the understanding of the proposed framework. Section 2.1 presents background material on UAVs. Then, an overview of current federal and state policies on drone use is presented. Finally, the doctrine that governs the use of force by law enforcement in the United States is reviewed.

2.1. Unmanned aerial vehicles

Unmanned aerial vehicles come in a wide variety of configurations [13]. They range from craft that an individual can easily carry to craft, such as the AeroVironment Global Observer, with a wingspan of nearly 200 feet. Their operating range spans from line-of-sight to over 17,000 miles; some even indicate an indefinite range, presuming satellite connectivity. Their flight ceiling ranges from only 90 feet to over 65,000. Over 55 countries and hundreds of firms worldwide currently have UAV development capabilities.

Numerous applications for UAVs have been identified [13]. These include a variety of aerial photography and surveillance applications, crop spraying, oil spill detection, various research applications, supply delivery, fire monitoring, agriculture assessment and communications monitoring. In addition to surveillance support for warfighters, many other war zone applications exist. UAVs have been designed to provide precision strike capabilities, disrupt enemy sensors, track moving targets and provide rapid response/fast attack capabilities.

UAVs have been used both domestically in the United States as well as overseas. The U.S. Federal Bureau of Investigation (FBI) has spent over \$3 million on UAVs; another \$0.7 million has been spent by other law enforcement entities within the Department of Justice (DoJ) [14]. The FBI and Alcohol, Tobacco and Firearms (ATF) staff initially argued that the privacy considerations presented by drones were similar to manned aircraft; however, the investigator general recommended separate agency-wide policy consideration [14].

Significant demonstration of the capabilities of drones for applying force has occurred [15]. For overseas use, the DoD has over 7500 UAVs. Between January 2011 and November of 2012, nearly 750 attacks were carried out using UAVs in Afghanistan and over 300 have been

operated to-date in Pakistan. These attacks have killed more than fifty “high-value” targets. Estimates for the total number of individuals killed by US UAVs range from 2000 to 3500, of which between approximately 250 and 900 were civilians. These strikes demonstrate the efficacy of armed UAVs for applying deadly force while also highlighting potential problems with their use.

Both the remote sensing and force application capabilities of UAVs are potentially of use to law enforcement. Remote sensing could be used to identify and capture evidence of crimes, to search for and track suspects and to direct human officers to those requiring assistance. The application of force by UAVs offers a rapid response capability, it allows the use of tactics not possible solely by human officers and may allow human officers to remain out of harm’s way during a force application scenario with an armed adversary.

2.2. Current drone policy

Drone use policy is in a state of flux. At the national level, five bills have been introduced in the House of Representative and two have been introduced in the Senate [16]. The house bills range from restricting the use of UAVs within the U.S. for information gathering purposes via generally requiring a warrant (HR 972) to prohibiting UAV use as a weapon (HR 1083). Both the House and Senate have introduced a bill prohibiting the use of a drone to kill a U.S. Citizen in the U.S. (HR 1242, S 505). The Senate has also introduced a bill banning the use of drones for law enforcement data collection except in a few exceptional cases (S 1016).

State and territory regulations vary dramatically [16]. Eight states, Puerto Rico, the U.S. Virgin Islands and the District of Columbia have not introduced a bill related to controlling UAVs. Thirty-four states have introduced bills that have not been enacted. Seven states have enacted various laws ranging from short-term moratoriums to general prohibition of law enforcement UAV use (with exceptions). In Maine, a bill was passed by the legislative branch and vetoed by the governor.

There is no shortage of suggested laws and policies. The U.S. National Association of Criminal Defense Lawyers (NACDL) has drafted a proposed bill [17] which would require a warrant for all UAV use for all government surveillance, except for the patrol of U.S. borders, to prevent imminent loss of life or bodily harm or in assessing an environmental catastrophe. The proposed bill bans the use lethal/anti-personnel weapons within U.S. borders, requires consent for private surveillance and prohibits government surveillance of first amendment activities. It also requires record keeping and retention related to UAV use, but limits the period of retention of data collected (unless it is being used for an excepted purpose).

The American Civil Liberties Union (ACLU) echoes many of the concerns of the NACDL [18]. They propose allowing warrantless surveillance when “specific and articulable grounds” exist that suggest that the UAV will capture evidence of a specific crime. They note the importance of policy setting by elected representatives (instead of police department users) and suggest a need for oversight and

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