

PART ONE

Unmanned Aircraft Systems (“UAS”) – aka Drones Usages and Regulation: Where Are We Headed?

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I. Introduction

The ever-quicken pace of technological innovation creates serious obstacles for legal, legislative, and regulatory regimes that are notoriously slow to adapt. One of the newest arenas in which this struggle is playing out is that of Unmanned Aerial Vehicles (“UAVs”), also referred to as “drones,” which are aircraft that can fly without a human operator on board. To fly, UAVs require an operator, which can be a human on the ground or an on-board computer, as well as a digital network. The entire system—aircraft, operator, and network—is known as an Unmanned Aircraft System (“UAS”). With the number of operative UASs projected to rise to 15,000 by 2020 and 30,000 by 2030,¹ a raft of new laws and regulations addressing safety and privacy concerns is building, with novel challenges sure to crop up.

The technology for unmanned flight is already here and improving rapidly. As is often the case, legal and safety issues are lagging behind technology. A solid legal framework needs to be developed, including FAA and legislative rules and regulations; a body of case law adapted and/or updated for drone usage; safety and security concerns addressed; protection of privacy, constitutional, and individual rights; a clear delineation of federal and state roles; and extensive research and development to improve performance and safety.

II. Why is this Topic Relevant?

The rapid development of UAS technology has created a burgeoning market for UASs. It has been estimated that the global market for UASs is likely to double from \$5.2 billion to \$11.6 billion by 2023, and global spending on UASs is expected to reach almost \$90 billion over the next 10 years.² The potential usages of UASs are limited only by our imagination.

There are a variety of anticipated uses of drones in the private, commercial, and governmental arenas. Potential commercial uses include agricultural/crop management (spraying for pests and monitoring crops yields and characteristics); law enforcement; emergency flights in hazardous conditions; inspection of infrastructure such as pipelines and electrical wires in dangerous conditions; surveying damage from natural disasters; weather/environmental monitoring; aerial photography; surveying real estate; and usage for motion pictures, television, and news media.

As this area of law expands, attorneys will need to know what laws and regulations are in place. Insurance professionals will also want to think about underwriting UAS risks (which are largely unknown) and what insurance coverage (or exclusions) is needed. Companies trying to enter this arena will need to know what laws and regulations apply, as well as business opportunities. In addition, the unique capabilities of UASs raise privacy and individual rights concerns that need to be addressed.

III. FAA'S Approach to Integrating UAVS into U.S. Airspace

A. FAA Steps Toward Integration of UAVs into National Air Space

UAVs are currently regulated under a 2007 Federal Aviation Administration ("FAA") policy stating that no person may operate a UAV in national air space without specific authority. The FAA takes the position that UAVs are "aircraft," regardless of whether the operation is for recreational, hobby, business, or commercial purposes, and thus, subject to FAA regulation.³ Further, the FAA has authority to regulate UAV operations for commercial and business purposes, even if flown below 400 feet. Moreover, the FAA has taken the position that it has authority to regulate all UAVs as "aircraft" if operated "in a careless and reckless manner."⁴

The FAA regulations apply differently to three different categories of aircraft. If an aircraft is for recreational use only, no FAA approval is required and the operator is simply advised to follow loose guidelines issued in 1981.⁵ For all uses other than recreation, an aircraft operator must apply for FAA permission to fly. Public aircraft (i.e., UASs performing a governmental function at the federal, state, or local level, such as for police, fire, or public universities) require FAA approval in the form of a Special Airworthiness Certificates ("SAC"). This SAC is issued for UASs in the "Experimental Category," and the FAA additionally issues a Certificate of Waiver or Certificate of Authorization ("COA"). Finally, UAVs with a commercial purpose are currently permitted only for manufacturers for research and development, market survey, and crew training. Just as public aircraft, commercial UASs require a SAC in the experimental category. The experimental certification process typically takes 60-90 days and is currently time-consuming and cumbersome. Even if an aircraft is issued an airworthiness certificate, a pilot certificate is still required. Since 2006, only 1,400 COAs and 100 SACs have been issued by the FAA.

B. The Federal Aviation Administration Modernization and Reform Act of 2012

Due to the lack of comprehensive regulations governing drones, the FAA has been tasked by the FAA Modernization and Reform Act of 2012⁶ ("FMRA") with:

- Integrating UASs into national airspace by September 30, 2015;
- Publishing final rules governing operations of small (less than 55 pounds) UAVs by August 2014;
- Providing notice of final rulemaking re: other UAVs by August 2014;
- Implementing new standards for public UAS operators; and
- Creating six UAS test sites. Contractors for each site will be required to enter into a contract with the FAA regarding test site operations, and privacy issues.

A comprehensive plan and rulemaking is expected over the next few years.

The FAA's focus is mainly on safety. UASs present a number of unique concerns, including whether their navigation systems and controls can be hacked or disrupted; how to avoid collisions with other aircraft and impact with the ground (especially in populated areas); and the need to integrate UAVs into Air Traffic Control and airport flight patterns. The integration of UAVs may require extensive updates and upgrades to the entire Air Traffic Control system. The approach to safety will revolve around the training requirements that the FAA imposes for UAS operators and the use of GPS technology to monitor flight.

Mid-air collisions are a serious problem and have already occurred in UAS operations. In October 2013, a malfunction caused a UAV to hit a U.S. Navy ship, the USS Chancellorsville, during a training event off the coast of Southern California, injuring two sailors.⁷ It was also recently revealed by Jim Williams, head of the unmanned-aircraft office of the FAA, that a near in-flight collision with a UAV occurred in March 2014 at 2,300 feet when a US Airways flight was landing

at Tallahassee Regional Airport in Florida. One answer to the problem of potential mid-air collisions is “sense and avoid” or “detect and avoid” technology that allows UASs to detect obstacles and automatically figure out the best way to avoid them. This technology is a major priority for the FAA.⁸

1. FAA Action Taken on FMRA

On November 7, 2013, the FAA issued its “Integration of Civil Unmanned Aircraft Systems (“UAS”) in the National Airspace System (“NAS”) Roadmap.” This roadmap lays out primarily safety concerns and the FAA’s plans for dealing with them. The FAA has also issued a Notice of Final Privacy Requirements for UAS Test Sites (the “Privacy Requirements”)⁹ and has delivered to Congress the UAS Comprehensive Plan (the “Plan”) that was mandated by the 2012 FMRA. Together, these three documents represent the most current pronouncement from the FAA as to how it intends to integrate UASs into our national airspace.

a. The Roadmap

Essentially, the FAA has laid out a two-tier system: larger UAVs (over 55 pounds) will take years of testing and rule making, while smaller UAVs (under 55 pounds) have an “express approval” track.¹⁰

With regard to safety issues, the Roadmap seems to forecast that future operation of UAVs may be limited to persons who have undertaken a certification and training process, who pass an examination, and who are medically qualified.¹¹ This process may impede the more basic types of UAV usage, such as commercial photography. The Roadmap further indicates future airspace restrictions (particularly an altitude ceiling), and a restriction on flying over populated areas.¹² Again, some of these restrictions (especially as to flying over populated areas) could serve as an impediment to commercial applications, and even public/governmental applications such as search and rescue and disaster area surveying and assistance.

The Roadmap also contains a reference to direct visual observation (i.e., the need to be operated within visual line of sight or momentarily out of sight of the pilot or visual observer) for smaller UAVs, so as to avoid regulations applicable to manned aircraft.¹³ Notably, the Roadmap directs that the pilot is to have full control, or override authority to assume control at all times during normal UAS operations.¹⁴ Thus, the FAA does not allow fully autonomous flight for UAVs at the present time.

With regard to privacy issues, the Roadmap clarifies that “[t]he FAA’s mission does not include developing or enforcing policies pertaining to privacy or civil liberties.”¹⁵ Instead, the FAA will work with other agencies to address privacy concerns. With respect to test sites, some privacy considerations are built into the requirements.¹⁶ This is a cause of some concern, as it is unclear whether the FAA is deferring to state and local standards on privacy issues and, if so, what federal preemption problems could arise.

b. The Plan/Privacy Requirements

The FAA Plan prioritizes the use of UASs by public entities (e.g., government, law enforcement, public universities, etc.) over civil uses (i.e., private and commercial), although 2015 is the goal for both to be fully implemented.¹⁷ Among the (mainly safety-oriented) goals outlined in the FAA Plan are:

- Defining acceptable standards for operation and certification of civil UAS;
- Ensuring any UAS includes a sense and avoid capability;
- Establishing standards and requirements for the operator and pilot, including standards and requirements for registration and licensing;
- Providing recommendations regarding the best methods to enhance tech and subsystems necessary to achieve the safe and routine operation of civil unmanned aircraft systems in the national airspace system;
- Creating a phased-in approach to the integration of UASs into the national airspace system
- Establishing a timeline for the phased-in approach;
- Creating a safe airspace designation for cooperative manned and unmanned flight operations in the national airspace system;
- Establishing a process to develop certification, flight standards, and air traffic requirements for UAS test ranges; and
- Determining the best methods to ensure the safe operation of UASs in the national airspace system.

The Plan also contains a comprehensive scheme for prioritizing research and development needs—inter-agency and with private sectors. To that end, in early January 2014, the FAA selected six UAS public entity test sites that will conduct critical research into how best to safely integrate UAS systems into the national airspace over the next several years, and what certification and navigation requirements will need to be established. The research will include finding solutions for airborne “sense and avoid” capabilities; command and control link issues, ground control station layout, standards, and human factors issues; protocols and procedures for airworthiness testing; lost link procedures; environmental impact; system safety and data gathering; and interfacing with our air traffic control systems.

The six test sites are: University of Alaska; State of Nevada; New York’s Griffiss International Airport; North Dakota Department of Commerce; Texas A&M University-Corpus Christi; and Virginia Tech. Each of these six test site operators will select test site users, and the test sites are to be made available for both commercial and civil use. Before each testing event, the FAA will issue notices to anyone operating in the scope of the testing airspace to ensure that all affected entities will be informed of the potential of UAS in their vicinity. To date, two test sites have been certified as viable: University of Alaska and North Dakota Department of Commerce. Testing at one or more of the sites is to begin June 28, 2014, and is allowed to continue until February 13, 2017.

The FAA established requirements for each test site that will help protect privacy. Test site operators must comply with federal, state, and other laws on individual privacy protection and must develop their own, publicly available privacy plan. They must also have a written plan for data use and retention and to conduct an annual review of privacy practices that allows for public comment.¹⁸

The need for quick action by the FAA is compounded by global competition. Other countries’ regulations are further along and/or more open than America’s, causing cutting-edge companies to take their UASs overseas, and arguably presenting a challenge to the U.S.’s supremacy in the field of aviation.

C. State Regulation/Federal Preemption Issues

The FAA has jurisdiction over the U.S.’s navigable air space, and is at work attempting to craft regulations to safely integrate UASs into U.S. airspace. However, some states have not waited around for federal guidance and have instead initiated their own regimes, potentially creating a quagmire of federal preemption issues.

States’ individual attempts to regulate UASs are setting the stage for a major clash between state and federal lawmakers. As laws and regulations develop at the federal level, there will inevitably be conflicts with state laws that will have to be sorted out in the courts, with a strong argument in favor of federal preemption of state and local efforts to regulate UASs.

In 2013, 43 states introduced 130 UAV bills, and thirteen passed laws.¹⁹ For example, an Idaho law prohibits photography by for-profit UAVs,²⁰ while a 2013 Oregon law bars UAVs from flying less than 400 feet above the property of a person who requests the limitation.²¹ These restrictions on private UAV usage raise legal questions regarding First Amendment rights relating to photography and newsgathering, as well as federal preemption issues under the Federal Aviation Act of 1958.²² Other states have placed restrictions on UAV usage by governmental entities: Florida, Illinois, Montana, Tennessee, and Virginia all limit the use of UAVs for law enforcement purposes.

At the federal level, H.R. 1262, called the Drone Aircraft Privacy and Transparency Act of 2013, would regulate the private use of UAVs, including data collection requirements and enforcement mechanisms. Another proposed law, the Preserving American Privacy Act of 2013 (H.R. 637), would prohibit the use of UAVs to capture images in a manner highly offensive to a reasonable person, such as when the subject is engaging in a personal or family activity under circumstances where the person has a reasonable expectation of privacy.²³

IV. The Legal Framework

With the FAA in the midst of integrating UASs into national air space and UAS technology rapidly advancing, a legal framework must be put in place. Part 2 of this Alert will address the possible legal landscape for UASs, as well as the recent FAA’s *Pirker* decision, which presents a challenge to the FAA’s authority over UASs.

ENDNOTES

¹U.S. Department of Transportation, Federal Aviation Administration, Aviation Policy and Plans “FAA Aerospace Forecast: Fiscal Years 2010–2030” at 48 (2010), available at http://www.faa.gov/data_research/aviation/aerospace_forecasts/2010-2030/media/2010%20Forecast%20Doc.pdf.

²Press Release, Teal Group Corp., Teal Group Predicts Worldwide UAS Market Will Total \$89 Billion in Its 2012 UAV Market Profile and Forecast (Apr. 11, 2012), available at <http://www.prnewswire.com/news-releases/teal-group-predicts-worldwide-uav-market-will-total-89-billion-in-its-2012-uav-market-profile-and-forecast-147008115.html>.

³49 U.S.C. § 40102(a)(6) and 14 C.F.R. § 1.1.

⁴49 C.F.R. §91.13.

⁵FAA Advisory Circular 91-57 (1981). These guidelines advise aircraft operators that flights should be kept below 400 feet above ground level, flown a sufficient distance from populated areas and full-size aircraft, and not for any business purpose.

⁶PL. 112-95.

⁷Joe Sutton, “2 Injured When Drone Malfunctions, Crashes into Navy Ship,” CNN.com, November 17, 2013, available at <http://www.cnn.com/2013/11/17/us/drone-malfunction-duplicate-2/>.

⁸Roadmap at 54.

⁹Docket No. FAA-2013-0061.

¹⁰Roadmap at 58.

¹¹Roadmap at 34, 52.

¹²Roadmap at 34–35.

¹³Roadmap at 33.

¹⁴Roadmap at 33.

¹⁵Roadmap at 11.

¹⁶Roadmap at 11-12; Privacy Requirements at 8, 13.

¹⁷Plan at 9, 16.

¹⁸Roadmap at 11-12; Privacy Requirements at 8, 13.

¹⁹National Conference of State Legislatures, “2013 Unmanned Aircraft Systems Legislation,” available at <http://www.ncsl.org/research/civil-and-criminal-justice/unmanned-aerial-vehicles.aspx>.

²⁰Idaho Code Ann. § 21-213.

²¹2013 Oregon Laws Ch. 686 Section 15. See also Tex. Gov’t Code Ann. Section 423.003.

²²The U.S. government has exclusive sovereignty over the airspace of the United States. 40 U.S.C. § 40103(a)(1). State regulation of these topics raises a myriad of federal preemption issues.

²³<http://www.ncsl.org/issues-research/justice/unmanned-aerial-vehicles.aspx>; <http://www.aclu.org/blog/technology-and-liberty/status-domestic-drone-legislation-states>.

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