

Drone Technology Soars to Dizzying Heights Despite the Drag of Regulatory Uncertainty

► **Jennifer Richter is a partner at Akin Gump with an extensive background working in technology, media and telecommunications. Here, she discusses the innovative world of unmanned aerial vehicles, including the nascent regulatory landscape around this technology and the cooperative effort that will be needed to move it forward.**

CCBJ: Please tell us a bit about your background and the focus of your practice?

Jennifer Richter: I love technology. Most of my legal career has been spent solving regulatory and legal puzzles presented by new innovations. When I started my law career almost 30 years ago, I wanted to work with companies that deliver communications services to the public. I caught the media bug during my first broadcast regulation course. When I finished my law degree, I was lucky enough to land a job at a small communications boutique in Washington, D.C. I was hired into their weird new “wireless” practice. This was 1991. The wireless industry didn’t really exist then. Wireless licenses had just been lotteried by the FCC, and there were no wireless networks or cell phones, apart from huge car phones. From that moment on, I’ve worked with companies that have built our nation’s wireless networks, and companies that are inventing new technologies that rely on, or interact with, the wireless networks.

This is where unmanned aircraft systems (UAS) comes into the picture. Years ago, when Amazon first indicated they would deliver packages using drones, a group of us met with them to discuss representing them in Washington and working on new drone policies to enable their goals. We discussed many issues, of course, but the issues I focused on related to communications, navigation and surveillance capabili-

ties for UAS. Questions like: How would remote pilots connect with drones and how often do they need to be connected? How would drones identify themselves while in flight? How would drones connect with each other and avoid colliding? How would drones connect with a low-altitude traffic management system? Their idea from the start was that UAS would rely on today’s commercial wireless networks to support their communications functions, and this made a lot of sense. Wireless networks provide coverage and service to high-rise buildings more than 400 feet above ground level, and this is the airspace in which many small drones will operate.

Use of the wireless networks was theoretical then, but today it is widely acknowledged. Even if there are details to work through, ultimately wireless networks will support UAS communications for many different types of drones and many different functions. Those functions include command/control links for drones, remote identification and tracking capabilities, collision avoidance, and real-time transmission of sensor data, videos and photography. All of these functions require spectrum. Regulators and the aviation industry increasingly recognize that traditional aviation air traffic solutions will not be able to satisfy all of the communications needs of UAS. Leveraging existing wireless networks, we are working on new solutions and options for command and control, detect and avoid, and connections to a UAS traffic management system. A lot of testing and standards-setting work is underway to validate this, while some rulemakings at the FAA and FCC are starting to touch on the issue. Various groups are hard at work on standards and policies that will enable commercial wireless networks to support UAS, including the International Telecommunication Union (ITU), Drone Advisory Committee, CTIA, 3GPP, RTCA, ASTM, and ANSI, among others.

Apart from the communications issues, our Advanced Aviation Practice at Akin Gump is hard at work with the major drone innovators, railroads, utilities, insurance companies, entertainment companies, wireless carriers, semiconductor companies, and major aircraft manufacturers on their use of UAS and urban air mobility or advanced air mobility (UAM or AAM) technology for their business plans. UAM/AAM refers to automated air taxis, essentially drones with passengers.

What is the current state of the regulatory landscape related to the UAS industry? Specifically, what are some of the privacy and safety issues we are facing?

First, let me clarify some of the acronyms used to describe this brand-new set of aviation innovations, as it can get confusing. A drone, an unmanned aircraft, and a UAV are the same thing – they are remotely piloted aircraft, highly-automated autonomous devices or vehicles in the sky. The UAS or Unmanned Aircraft System is more than just the drone. It is the drone, the remote pilot, ground station and the communication links and other components that control the drone. My work for the UAS industry largely involves the communications links to and from the drone, and the systems that support it. But the most exciting innovation of all, for the future, will be UAM/AAM – passenger air travel on unmanned vehicles. UAM/AAM will enable a third dimension of passenger air travel that doesn't exist today, alleviating congestion on roads and enabling better access to desired locations where people want to live and work.

Where are we on drone regulations today? There are big gaps that need to be addressed. Aviation regulation continues to lag behind the capabilities of UAS technology, and more needs to be done on that

front – and faster – without compromising safety. Our government knows that and is working on it but the process is slow. The trouble is that entirely new regulations are needed for many different components of the UAS ecosystem. For example, we need regulations to enable a remote identification system for UAS. We need regulations to govern collaborative UAS traffic management services that will largely be run by private industry. We need regulations for type certifying the various types of unmanned aircraft. We need regulations for routinely approving advanced UAS operations, such as flight beyond visual line of sight (“BVLOS”), flight over people, and package deliveries by drone. We need regulations for counter-UAS authorities and technologies. We need regulations to protect critical infrastructure from drones. Some think we need privacy regulations related to the capture of information by UAS. We also need the involvement of local cities and communities to develop “smart city” infrastructure, so that there is a robust communications system deployed on the ground that can support all these innovations in the air. Resolving these myriad issues will enable UAS innovations, real and anticipated, across numerous industries, including oil and gas, agriculture, entertainment, real estate, and insurance, including multi-modal transportation, to name just a few.

But new regulations take time to develop through the collaboration of all stakeholders, in-



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Urban Air Mobility, which some are now calling Advanced Air Mobility, will enable a third dimension of passenger air travel that doesn't exist today, alleviating congestion on roads and enabling faster access to desired locations, where people want to work and live.

cluding industry, public interest groups and communities, aviation regulators and the security community. Many federal regulators are involved including the Department of Transportation, FAA, FCC, the Department of Homeland Security, the Department of Justice, the Department of Defense and others. It is not a small task to bring forward a framework that will enable safe and secure deployment, use and integration of UAS in the airspace.

In the absence of a complete and finalized regulatory system for various types of UAS, the FAA and industry are trying to accommodate requests for UAS operating approval, and for type certification of UAS, with existing aviation regulations that are largely inapplicable. For example, Google's Project Wing requested more than 100 exemptions to FAA regulations in order to get their Part 135 application for drone package delivery approved. This laborious approach is obviously not sustainable for an entire industry, or the FAA, over the long term. At Akin Gump, we have developed an interactive database that studies requests for advanced operation authorizations and how the FAA has previously addressed those requests, including requests for Part 135 authorization for package delivery, and requests for authority to fly BVLOS or over people. We are using this tool to help clients successfully navigate a path through the FAA until new policies and procedures are in place. For its part, the FAA recently

released a new rulemaking to issue type certificates for individual unmanned aircraft designs heavier than 55 pounds that will be used for package delivery. Comments in response to that rulemaking are due in early March. This is good progress in the right direction.

All that said, what changes do you anticipate in terms of government regulations?

There are many, many changes, recommendations, rulemakings and new regulations coming for UAS, in 2020 and 2021. Right now, we are in the middle of the Remote Identification rulemaking for UAS with the FAA; the public comment period closed after receiving over 50,000 comments. Apart from enacting Part 107 regulations in 2016, that enabled commercial, visual line of sight use of small UAS, the Remote ID rulemaking is the most critical one for the UAS industry. Our security agencies have held the FAA back from adopting advanced regulations for UAS that will enable BVLOS flight and flight over people, until there is a workable system for Remote ID. Estimates suggest that it may be a few years before we have a working Remote ID system in the field.

The FCC and FAA also are engaged in rulemakings that will allow them to make recommendations to Congress under Section 374 of the FAA Reauthorization Act about viable spectrum solutions for command and control of UAS. That report is past due, but is likely to be made in coming months. The FCC also may initiate a rulemaking to establish service and technical rules for the 5030-5091 MHz band, to make it available for command and control of UAS. The FCC also is considering rules for the 5.9 GHz band, the intelligent transportation spectrum, which can be used for vehicle-to-vehicle ("V2V") communications for cars on the ground, and aircraft. This band may be opened for unlicensed/Wi-Fi use, in part, and the aviation industry plans to weigh in with

the FCC to ensure the final plan for the band continues to support aircraft use for V2V. This use case has already been studied by NASA as part of its progressive testing of a UAS traffic management system.

In addition to the current rulemaking for type certificates for package delivery drones that are heavier than 55 pounds, the FAA has tentatively scheduled rulemakings this year that will enable UAS flight over people, and flight beyond the visual line of sight. A rulemaking to protect critical infrastructure from drones under Section 2209 of the FAA Reauthorization Act also is scheduled to commence. It would be very encouraging if all of these rulemakings were issued in 2020. However, it's possible that a number of them will be postponed to 2021.

What kinds of law enforcement activity are you seeing? How are you advising clients to stay on the right side of enforcement activity?

Probably the most asked question by our clients is “What can I do about the drone that is flying over my confidential business operations?” Industry is concerned about unauthorized drones surveilling their operations. The answer, unfortunately, is not much. It is a federal crime to take an aircraft out of the air, and drones are classified as aircraft. A number of agencies now have counter-UAS authority under Title 18 of the U.S. Code, including the Department of Justice, Department of Defense, Department of Homeland Security and Department of Energy. But unless and until Title 18 authority is expanded to include local law enforcement and certified members of private industry, such as representatives of critical infrastructure, which requires legislative action, it will be extremely difficult to protect private property and facilities from the presence of unwanted drones. Similarly, jamming technologies cannot be used by civilians to disrupt the communications links of a

drone in order to disable it. Only the government has the authority to employ jamming technologies.

In order to protect private operations, a company could post signage to try to create a “no drone zone,” employ acoustic detect-and-avoid technologies to determine when an aircraft is heading toward their property, and use “attack dog” drones to try to back unwanted drones away from the property. Beyond these, lawful methods of protecting one's property from drones are limited today.

There are a number of bills pending in Congress that seek to address UAS issues, including security threats posed by drones. One of those bills is the DHS Countering Unmanned Aircraft Systems Coordinator Act, which is pending in both the Senate and the House. Congress also has recognized the need to protect some critical infrastructure from drones, but it has yet to implement those protections. In 2016, Congress included Section 2209 in the FAA Extension, Safety, and Security Act of 2016. As written, Section 2209 requires the FAA to establish a procedure for “operators or proprietors of fixed site facilities” to apply for a designation that would “prohibit or restrict the operation of unmanned aircraft in close proximity” to fixed sites identified in their application. That provision required FAA action by January 15, 2017, but there has been no public progress toward implementation. In our view, implementing Section 2209 in a manner that leverages the specialized knowledge of the owners and operators of critical infrastructure is essential to ensuring safe UAS operations around those facilities. We believe the FAA is presently working on a proposed rulemaking to implement Section 2209.

These are exciting and challenging times for technology and aviation. The advances that are being made will change how all of us live and work, hopefully for the better. Finding the right regulatory balance that will safely enable these innovations for all stakeholders will preoccupy our work for many years. ■