Rules of the sky for commercial UAVs

Caroline Gentry, Esq.

Have you ever looked up and noticed an unmanned aerial vehicle (UAV, popularly referred to as a "drone") flying nearby? If the answer is no, just wait… you will. Hobbyists have flown UAVs for years, and more recently, businesses have begun flying UAVs. Why?

The answer is simple: UAVs are great for business. Commercial UAVs carry sensors that quickly and reliably capture large amounts of data at a relatively low cost and without the risks attendant on putting a person on a ladder or in an airplane. Realtors and insurers use UAVs to capture images for use in marketing or damage assessments. Farmers use UAVs fitted with multispectral imaging sensors to measure crop health and identify areas in need of pesticides or irrigation. Construction firms use UAVs to conduct site surveys, perform volumetric analyses, create as-built plans, and monitor progress by routinely filming the site. Energy firms use UAVs fitted with thermal imaging sensors to inspect pipelines and detect leaks not yet visible to the naked eye. Telecommunication firms use UAVs fitted with Light Detection and Ranging (LiDAR) sensors to inspect and create 3D models of cell towers. Mining firms use UAVs fitted with hyperspectral sensors to identify the mineral content of rocks. Security firms use UAVs fitted with electro-optical/infrared sensors to provide surveillance. Retailers use UAVs fitted with radio-frequency identification (RFID) sensors to conduct warehouse inventories. Delivery drones are beginning to make their debut. And these are just some of the impressive commercial applications for UAVs.

Given all of these benefits, why don't more businesses use UAVs? Aside from the usual barriers to entry—the reluctance to adopt and invest in new technologies, the need to hire trained personnel, etc.—there are unique technological and legal hurdles. Businesses want UAVs to have improved sense-and-avoid capabilities, longer flight times, and the ability to fly safely beyond line of sight. They also need more certainty regarding federal, state and local laws. The "rules of the sky" are clearer today than just a few years ago, but they are still developing. So what, at this point, are the rules for commercial UAVs?

Most of the attention has been focused on the federal level. In 2012, Congress directed the Federal Aviation Administration to come up with a five-year roadmap for the integration of civil unmanned aircraft into the

National Airspace. The FAA began a major push that resulted, two years ago, in the issuance of regulations for small (less than 55-pound) UAVs. Under the rules set forth in 14 C.F.R. 107 ("Part 107"), remote pilots who pass a written test can fly small UAVs under certain conditions, including no flights over people and no flights beyond visual line of sight. Part 107 allows businesses to waive certain rules if they show that they can operate safely. Last year, for example, CNN became the first entity permitted to fly UAVs directly over people. Part 107 lowered the costs of entry for businesses and it has been a welcome first step.

Thorny questions remain, however. For example, who owns, and who has the right to regulate, the National Airspace? The ancient rule was cuius est solum, eius est usque ad coelum et ad inferos: "Whoever's is the soil, it is theirs all the way to Heaven and all the way to Hell." This expansive and simple rule was curtailed by the birth of aviation and Congress's subsequent declaration that "[t]he United States Government has exclusive sovereignty of airspace of the United States." 49 U.S.C. § 40103(a)(1). "The air is a public highway," *U.S. v. Causby*, 328 U.S. 256, 261 (1946), and it makes sense for the federal government to control it exclusively because airplanes fly at high altitudes, often cross state lines, and should not be subject to a patchwork of inconsistent state rules.

But it is not obvious that the same logic applies to UAVs. Unmanned aircraft fly at low altitudes, rarely cross state lines, and are launched and landed in spaces traditionally controlled by state and local governments. What jurisdictions should federal, state and local governments have over UAVs? Should they divide their respective jurisdictions by altitude, or should they have overlapping jurisdictions with shared and distinct responsibilities? Conflicts have already arisen, including regarding the fundamental issue of where UAV pilots can fly. Federal law broadly allows UAVs to be flown in most airspaces, but some state and local governments have decreed certain airspaces (e.g., parks, public right-of-ways) to be off limits. Conflicting state and local laws may be preempted by federal law, but courts will need to make those decisions.

UAVs also have created difficult questions regarding property rights. Before a pilot flies a UAV a mere 50 yards above a house or backyard, does she need to obtain permission from the owner? Or does the aerial public highway extend down to wherever UAVs can be flown? And how will UAVs change the legal rules governing civil claims for invasion of privacy, trespass and nuisance? Questions arising from repeated collisions of these competing interests—federal regulation of aviation, state and local police powers, the public interest in an aerial highway, the need to safeguard reasonable expectations of privacy, and private property rights—will be hotly debated in courts and law schools for years to come. And these conflicts will only increase as state and local governments pass more and more laws (both civil and criminal) specific to UAVs.

For now, the best advice for businesses that fly UAVs is to keep a close eye on federal, state and local legislatures, to educate lawmakers about the benefits of UAVs, and to advocate for the passage of favorable laws. Some people see UAVs as a problem to be managed. But when people understand the benefits that UAVs provide, and are persuaded that concerns about them can be adequately addressed, they are more likely to support laws that allow UAVs to be flown. And at that point, as they say, the sky's the limit.

Caroline Gentry is a partner at Porter Wright Morris & Arthur LLP. She currently teaches at Sinclair Community College on the topic of Unmanned Aerial Systems (UAS) Standards, Regulations and Law, and is pursuing an associate's degree in Sinclair's UAS program.