

Civil Unmanned Aircraft Forecast: A Touch of Gray

"I feel about the airplane much as I do in regard to fire. That is, I regret all the terrible damage caused by fire. But I think it is good for the human race that someone discovered how to start fires and that it is possible to put fire to thousands of important uses." — Orville Wright

We're about halfway through the three-year period mandated by the Federal Aviation Administration (FAA) Modernization and Reform Act to integrate unmanned aircraft system (UAS) technology into the National Airspace System (NAS) by September 2015. One thing that's clear is that much remains unclear.

In terms of the two most pressing issues surrounding the effort—public safety and privacy rights—a vast expanse of gray area continues to be debated. The former concern, however, should be easier to address than the latter.

Technology comes in all shapes and sizes, and tends to move at warp speed wherever there's huge monetary profit potential. Thus, the sense-and-avoid technology issue, which asserts that UASs must be able to see each other and other objects during flight, and avoid colliding with them, more than likely will be solved by 2015. Disentangling privacy issues, however, could prove a bit trickier.

Privacy Challenges on the Horizon?

At the heart of the privacy debate is the Fourth Amendment, which protects U.S. citizens from "unreasonable searches and seizures." In terms of UAS privacy issues, *Katz v. United States* (1967) established a legal standard that has been applied frequently in litigation involving emerging technologies.

The *Katz* decision asserted that an incriminating conversation inadvertently taped by law enforcement surveillance in a phone booth without a warrant wasn't admissible in court because, "... what a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection. What he seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected."

The courts already have upheld cases where pilots have observed illegal marijuana cultivation while flying above private property. Then in *Kyllo v. United States*, the Supreme Court ruled that when police used a thermal imaging sensor to detect excessive heat emanating from a garage, indicating possible marijuana cultivation, it was an invasion of privacy because the sensor isn't something that generally would be available for public use.

This is interesting because UASs are capable of carrying all kinds of cutting-edge sensors as payloads, including facial recognition technology. With this capability, a UAS theoretically could fly over a crowd and pick out an individual by identifying his or her face. As experts have pointed out, however, similar technology already exists on many smartphones, which would make UASs nothing more than "flying smartphones."

Potential Users Jump the Gun

Despite the challenges of integrating UAS technology into the NAS, a recent poll conducted by the Aerospace Industries Association shows strong public support for nonmilitary uses of UAS technology—54 percent of the public favors such uses—although the same poll indicates only 25 percent of respondents are "very well aware" of current and potential nonmilitary UAS uses.

Meanwhile, according to a recent Fox News report, illegal use of UAS technology in the United States is thriving. In one case, the FAA proposed a \$10,000 fine against drone business Team BlackSheep for buzzing the University of Virginia campus while making a promotional video. Earlier this year, Dale Slear, co-owner of aerial photography company Beat Copter, received a cease-and-desist letter from the FAA, grounding the company's \$15,000 Cinestar 8 Octocopter. All this, and we're only in the first inning!

— By Jeff Specht, publisher, *Earth Imaging Journal*



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