



Drones serve in research, other federal missions

By SEAN REILLY

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If drones have yet to take off commercially in the United States, federal agencies already are deploying them for missions as diverse as border surveillance,

scientific research and firefighting.

The Federal Aviation Administration first gave the go-ahead for government use of unmanned aircraft systems (UAS) in U.S. airspace in 1990.

Last year, FAA issued 257 certifi-

icates, up approximately 75 percent from 2009, authorizing federal, state and local governments and state universities to use the systems.

To some, the trend is grounds for alarm. In March, Sen. Rand Paul, R-Ky., filibustered the nomination of

since-confirmed CIA Director John Brennan for 13 hours until the Obama administration clarified that it would not use drones to target American citizens suspected of terrorism on U.S. soil.

Under prodding from Paul, the FBI last month acknowledged us-

ing drones for surveillance in 10 criminal and national security cases since late 2006.

Besides getting the required FAA authorization, the FBI conducts a legal review to ensure that there are no Fourth Amendment or privacy concerns, the bureau told Paul in a letter posted on his Senate website.

Other agencies are turning to drones because they make sense from a cost and safety standpoint.

"Unmanned aircraft systems are coming down in price and are affordable," said Mike Hutt, head of the U.S. Geological Survey's national UAS project office. Created in 2008, the office is in charge of pioneering uses for the Interior Department's fleet of 36 unmanned aircraft systems.

Ideas come from field employees, Hutt said, and the uses that are planned or underway include thermal imagery, finding animals tagged with tracking devices and detecting chemical plumes. There's also a "big safety payoff," Hutt said, in flying drones instead of manned aircraft in Interior's vast tracts of remote lands.

By 2020, he predicted, drones will supersede manned aircraft and satellites as the main vehicle for airborne "remote sensing" uses.

Unmanned aircraft have a much longer history at NASA, which has been working with industry since the early 1990s to develop high-altitude drones for science missions. NASA — either on its own or with another agency — has used drones to take atmospheric and radiation readings for climate studies, conduct hurricane and thunderstorm research, and to spot wildfires, said Matthew Fladeland, airborne science manager at NASA's Ames Research Center in California.

Not only can drones go into areas too dangerous for manned aircraft, Fladeland said, their long range and endurance allows them to take measurements over longer periods. Drones aren't necessarily cheap, however. Besides a ground crew, operators may need to fly a manned "chase plane" or have a ground observer in place for safety reasons.

The experience of Customs and Border Protection, which employs a fleet of 10 Predator drones for border surveillance and other operations, underscores other possible pitfalls.

In a report last year, the Department of Homeland Security inspector general found that CBP was having trouble getting a full payoff from its investment. Because of a lack of qualified staff, FAA restrictions and other factors, CBP was getting well under half the number of potential flight hours.

CBP agreed to do a better job of planning for operations, maintenance and equipment. □

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