

Drones left out of air traffic plans

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In this March 12, 2014 file photo, a drone prepares to land after flying over the scene of an explosion that leveled two apartment buildings in East Harlem in New York. When government officials designed a new air traffic control system, they neglected to take something into account _ drones. The FAA has already spent over a decade and more than \$5 billion on the complex and ambitious new system dubbed NextGen, and is nearly finished installing hardware and software for several key systems. But with demand to fly unmanned aircraft escalating, there are questions about whether the new air traffic system will be able to accommodate them. The farther along the program gets, the more difficult it becomes to go back and make changes. The program isn't expected to be completed for at least another decade. (AP Photo/Mark Lennihan, File)



Designers of the ambitious U.S. air traffic control system of the future neglected to take drones into account, raising questions about whether it can handle the escalating demand for the unmanned aircraft and predicted congestion in the sky.

"We didn't understand the magnitude to which (drones) would be an oncoming tidal wave, something that must be dealt with, and quickly," said Ed Bolton, the Federal Aviation Administration's assistant administrator for NextGen, as the program is called.

Congress passed legislation creating NextGen in 2003, and directed the agency to accommodate all types of aircraft, including drones.

The program, which is not expected to be completed for at least another decade, is replacing radar and radio communications, technologies rooted in the early 20th century, with satellite-based navigation and digital communications.

The FAA has spent more than \$5 billion on the complex program and is nearly finished installing hardware and software for several key systems. But the further it progresses, the more difficult it becomes to make changes.

Government and industry officials have long maintained that drones must meet the same rules that apply to manned aircraft if they are to share the sky. That is changing, however, said Chris Stephenson, who represents the National Air Traffic Controllers Association on several U.S. and international unmanned aircraft committees.

"It's becoming painfully apparent that in order to get (drones) in there, there is going to have to be a fair amount of accommodation, at least in the beginning," he said.



Michael Whitaker, the FAA's deputy administrator, acknowledged that drones "weren't really part of the equation when you go back to the origin of NextGen."



This undated handout photo provided by the Federal Aviation Administration (FAA) shows the FAA's Deputy Administrator Michael Whitaker. When government officials designed a new air traffic control system, they neglected to take something into account _ drones. The FAA has already spent over a decade and more than \$5 billion on the complex and ambitious new system dubbed NextGen, and is nearly finished installing hardware and software for several key systems. But with demand to fly unmanned aircraft escalating, there are questions about whether the new air traffic system will be able to accommodate them. The farther along the program gets, the more difficult it becomes to go back and make changes. The program isn't expected to be completed for at least another decade. (AP Photo/FAA)



The NextGen plans for the next five years do not address how drones will fit into a system designed for planes with pilots on board, but the agency will have to consider whether to do that, Whitaker told a recent meeting of the NextGen Institute, a nonprofit association sponsored by the FAA so that industry can assist with research.

Most of the initial demand to fly unmanned aircraft came from the departments of Defense and Homeland Security, which wanted to test military drones or use them to monitor U.S. borders.

Later, interest began to build around potential uses for smaller drones, especially by police departments, but also for those wanting to spray crops, monitor pipelines and inspect offshore oil platforms. These drones can weigh anywhere from a few pounds to several hundred.

More recently, commercial demand has soared—from wedding videographers and real estate agents to Amazon and Google, eyeing potential package deliveries.

The FAA bans commercial drone operations with a few, limited exceptions. That ban, however, is undermined almost daily by frustrated small drone operators.

Bolton, also addressing the institute, said the NextGen office is working closely with a drone research team at the FAA's technical center in Atlantic City, New Jersey.

FAA officials are under pressure from Congress and industry to loosen restrictions on smaller drones. The agency is expected to propose safety rules in November for businesses that want to operate them.

Smaller drones are less an issue for NextGen because the FAA is expected to limit their altitudes to less than 400 feet (120 meters). Air



traffic controllers generally don't separate aircraft at such low altitudes, except near airports.

But there is also concern about potential traffic and collisions with lowflying smaller drones. NASA researchers are working with the FAA and industry to develop an air traffic control system for aircraft flying at 500 feet (150 meters) or lower. There is no such system today except around airports.

Medium to large drones that are eventually expected fly in "Class A" airspace—over 18,000 feet, (5,500 meters) where they must be able to avoid collisions with other aircraft—are more of a problem for NextGen.

They will be controlled by a ground pilot, who will be able to see where the drone is on a computer screen and can communicate with controllers. But there won't be a pilot on board who can look out and adjust course to avoid a collision.

There are other differences as well.

Pilots who fly in Class A airspace file flight plans identifying their routes. But some larger drones are expected to stay aloft at high altitudes for days or weeks at a time, and their flight plans will be much more complex.

ERAM, a NextGen computer system that controllers use to guide highaltitude air traffic, won't be able to handle such voluminous flight plans and will have to be adjusted, aviation experts said. ERAM is already over budget and years overdue.

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