

Companies increasingly turn to tech to keep drones out of no-fly zones

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Aeryon Scout UAV in flight.

Low-cost hobby drones are making the power of flight accessible to anyone with a few hundred bucks to spare. But a combination of technology and safety laws could take the controls out of users' hands.

When a DJI Phantom 2 quadcopter [drone](#) crashed at the White House in late January, Hong Kong-based DJI responded quickly with the release

of a software update that added a 15.5-mile no-fly zone around Washington, preventing its Phantom 2 products from taking off in the area. The company already had no-fly zones that prohibit flights within 8 miles of thousands of airports.

(The update wasn't as effective as the company hoped. DJI suspended downloads because of unspecified issues reported by users.)

Other companies, too, are trying to anticipate problems, according to Colin Snow, founder and chief executive of Redwood City, Calif., drone industry research company Drone Analyst.

Many companies already have created software to automate the process of checking for Transportation Security Administration no-fly updates, Snow said, and using GPS and other technologies to keep drones flying legally has become an industry norm.

State College, Pa., startup Ares Drones believes its app offers an option that maximizes safety by minimizing the chance for human error.

Founded in September by Ben Brautigam, Sherwyn Saul and Justin Miller - who are IT managers at Penn State University - the company has developed software that prohibits drones from entering no-fly zones and stops elevation of the devices short of the 400-foot height ceiling imposed by regulators.

Using a touch-screen interface designed with Apple Maps, the Ares App allows users to trace a designated [flight plan](#) directly onto the map.

Designated no-fly zones are marked in red circles on the map, and any flight plan that attempts to pass through a zone is rejected. Once a flight plan is approved, the drone flies along that path autonomously, without any manual interference.

Ares' founders said they're not aiming to sell their technology as a means to cut hobbyist-controlled flights out of the equation. Their goal is to market the technology to real estate and insurance companies.

But they can see how regulators might find the idea appealing.

"The way the (Federal Aviation Administration) has traditionally worked is that you plan your flight before you fly. When you get on an airplane, that's all planned out before it takes off," said Miller, who is also vice president of product development.

"With drones, we don't have that right now. So for us, we want to build that back in. The more traditional view is you're planning first so you can check against these dangers and issues," Miller said.

A mandate for automated flights or even requirements for drones to present flight paths before taking off will dampen the creative potential tied to spontaneity, said Tom Cwenar, founder of South Side-based Cwenar Photography.

The Emmy Award-winning television commercial director began using a DJI Inspire drone for advertising jobs about three years ago. Since that time, his bottom line has increased but his portfolio of jaw-dropping images has multiplied, something he doubts could have happened as easily if he stayed grounded.

"As a director, I'm always saying, 'Why don't we try this, why don't we look at it in a different way,' " he said. "(Limiting drone flights) would take all of the creativity out of the process. There would be no serendipity to it."

The evolution of the model airplane has spawned an industry of high-powered drones with enough juice to cross paths with commercial jets

and high-definition cameras capable of capturing acres of farmland or zooming in on lone individuals from hundreds of feet above.

That's a far cry from radio-controlled planes flown by hobbyists in the 1970s, which is when the FAA first drafted rules surrounding drone use.

The FAA began allowing drones, or unmanned aircrafts, in the country's national airspace in 1990. It has been steadily updating policies for commercial and recreational drone use since 2012.

Under Section 333 of the FAA Modernization and Reform Act of 2012, commercial agencies seeking to fly drones in the national air space must obtain a Special Airworthiness Certificate that grants exemption to companies using drones for research and development, flight and sales demonstrations, and training exercises.

So far, the FAA has issued 24 regulatory exemptions to companies seeking to use drones for commercial use.

Hobbyists are generally limited to flying drones at heights below 400 feet, at least 5 miles away from airports and air traffic, and they must keep drones in sight of the person operating them.

The agency is working on a definitive order regarding use of drones that is expected to be released this year.

Fortunately for Cwenar and his colleagues, lawmakers seem to be leaning more toward penalties and enforcement for scofflaws than requiring automation or flight plans, according to Snow.

Noting that companies such as 3D Robotics, DroneDeploy and many others have implemented or are working on no-fly-zone technologies, Snow doubts the government will have to force the issue because a few

bad actors skirt the rules.

"There have been a lot of scares, but there are 10,000 or 20,000 units sold every month. There are hundreds of thousands of drones flying in Class G airspace. We're safe right now," he said.

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