

# Proposed FAA rules would facilitate drone use to save lives and make money

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Earlier this year, the Federal Aviation Administration proposed new rules that would allow drones to fly overnight and over people without waivers under certain conditions. While the focus of commentary has been the benefit of facilitating the delivery of commercial packages, the proposed rules would free drones to provide life-saving medications, give insight to emergency responders, and monitor wildlife and conservation efforts.

The recent fire at Notre-Dame illustrates the profound value drones can bring. French fire personnel used two drones to direct and apply fire suppression in the historic structure, thereby significantly increasing the effectiveness of firefighting efforts.<sup>1</sup>

The current rules improperly limit a drone's ability to access locations and collect data. They also increase product costs, as delivery by drone would be much cheaper than delivery by people. Although drones pose ethical and safety challenges, their potential benefit outweighs the risks and is appropriately reflected in the relaxed proposed rules.

## PROPOSED CHANGES INVITE USERS TO INNOVATE

Part 107 of the FAA regulations govern when, where and how drones can fly. Currently, Part 107 strictly limits the circumstances under which drones can operate, which has stifled development in the commercial drone industry.

Specifically, the regulations prohibit flight over people and at night unless the operator has a waiver, which the FAA has rarely granted. In fact, the agency has denied 99% of applications to fly over people and 75% of applications to fly at night. These two limitations left little room for non-recreational drone users to innovate.

Recognizing the regulations suppressed opportunities, the FAA proposed relaxed rules in early 2019. Under the proposed rules, drones may operate over people and at night under certain conditions without a waiver. The proposed rules seek a balance: "The FAA's challenge in developing this proposal, therefore, is to balance the need to mitigate the risk small unmanned aircraft pose to other aircraft and to people and property on the ground without inhibiting innovation."<sup>2</sup>

While the attention has been on the effect the new rules would have on commercial operations, the proposed rules would also

encourage the use of drones for humanitarian purposes. The cost, size and speed of drones make them an ideal vehicle to reach those in need. This potential benefit to society, when weighed against ethical and safety concerns, helps the FAA strike this much-sought-after balance.

## OVER PEOPLE

The FAA divided the proposed rules allowing flight over people into three categories. Category 1 allows drones weighing 0.55 pounds or less to fly over people with no additional limitations because their small size creates a low probability of causing harm.

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Category 2 drones weigh more than 0.55 pounds and must come with a manufacturer-provided guarantee that they cannot cause injury as severe as the injury that would result from a transfer of 11 foot-pounds of kinetic energy from a rigid object. To fly over people without a waiver, a Category 2 drone cannot have exposed rotating parts that could lacerate human skin. Nor can it have an FAA-identified safety defect.

Category 3 drones meet all of the specifications of Category 2 drones but allow for a higher injury threshold. Unlike Category 1 and 2 drones, Category 3 drones must meet certain operational requirements because of the increased risk of injury to people on the ground.

The proposed rules prohibit Category 3 drones from flying over any open-air assembly of people. Category 3 drones can operate over a closed-site or restricted-access space as long as anyone within that site is notified that a drone may fly over them. Drones not within a closed-site or restricted-access space may still travel over people, but they cannot hover.

## AT NIGHT

The proposed rules would allow drones to fly at night under two conditions. First, the operator must complete general knowledge testing. This proposed testing is updated from its current version to

include new subject matter relating specifically to operations at night. Second, under the proposed rules drones flying at night must have anti-collision lights illuminated and be visible for at least 3 statute miles.

### HEALTH CARE USES

By allowing drones to fly over people and at night, society moves closer to unfettered access to health care. Because they are battery-operated and capable of reaching places that land vehicles and other aircraft types cannot, drones can efficiently deliver life-saving medications, blood and vaccines with little environmental impact. A few companies have already recognized the versatility of drones in the health care space and started exploring this opportunity with success.

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## The proposed rules do not include specific remedies to address privacy concerns.

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Zipline, a startup in Silicon Valley, delivers blood to Rwanda,<sup>3</sup> where only 25% of roads are paved. When it rains, delivery by vehicle becomes difficult and hospitals risk shortages of vital medical supplies.

Since its launch in October 2016, Zipline drones have made more than 10,000 flights, delivering thousands of units of blood to remote clinics who placed their orders by text message. It takes just one minute for Zipline to take off with the delivery after receiving the order, which keeps the samples from spoiling and timely provides the supplies required to respond to an emergency.

In the United States, the FAA recently approved a partnership between North Carolina, UPS and Matternet, an autonomous drone technology firm, to transport medical supplies and lab samples via drone.<sup>4</sup> This partnership is part of the FAA's Unmanned Aircraft System Integration Pilot Program, a three-year project designed to test the safety of drones in commercial airspace.

Blood samples are loaded into a secure compartment underneath the drone and flown across the hospital campus at WakeMed in about three minutes. A human making the same delivery to this Raleigh hospital takes nearly 30 minutes in traffic. In this case, drones free the roads of delivery vehicles and their emissions while improving patient services through lower costs and faster deliveries.

Drones must fly over people and at night to make health care more accessible and effective. The proposed regulations free drones to help those in need of medical attention when they need it most.

### ENVIRONMENTAL USES

Permitting the operation of drones over people and at night also benefits the environment. Because drones can be deployed quickly and effectively gather data, they can help workers make informed decisions during and after natural disasters. During recent wildfires in California, the California Air National Guard deployed drones to collect data that resulted in faster response times.<sup>5</sup>

Following suit, the Pentagon's Defense Logistics Agency recently released a Request for Information on the feasibility of using drones to provide disaster relief support, such as food and water, on the East and Gulf Coasts.<sup>6</sup> Disasters often leave roads and airports unreachable, but drones can still access these sites without risking harm to the operator.

In addition to aiding in disaster relief, drones can effectually monitor alternative energy sources. Wind turbines, solar panels and power lines require regular inspection, which is often dangerous and time-consuming. With a drone, the mechanism can be safely inspected in minutes, which in turn encourages more widespread use of alternative energy sources.<sup>7</sup> Even oil and gas companies are beginning to use drones to monitor methane emissions since they can reach a broad area while lowering labor costs and increasing detection speeds.<sup>8</sup>

As a player in conservation efforts, drones can track water quality, natural gas pipelines and pollution.<sup>9</sup> The National Oceanic and Atmospheric Administration relies on drones for data related to marine mammal conservation.<sup>10</sup> The NOAA chose drones to collect data because they maneuver more easily than boats, fly in a greater variety of weather conditions and are less disruptive to animals.

The proposed FAA rules grant greater accessibility to the world around us. Drones, whether through deliveries or the provision of crucial information, can change the way society respects and responds to the environment. The current Part 107 improperly limits the ability of drones to make an impact on the environment, and the proposed rules encourage users to tap drones as a resource.

### ETHICAL AND SAFETY CONCERNS

Despite the benefits to society and the green light for commercial innovation, the proposed rules do present ethical and safety concerns. Privacy concerns are among the most common. The FAA, however, takes the position that these concerns are related to technology and equipment, and are not within the agency's administrative reach — which stops at regulations regarding the safe operation of aircraft.<sup>11</sup> The proposed rules do not include specific remedies to address

these privacy concerns; however, the FAA has partnered with other agencies to address this issue.

Others are concerned about safety, including midair crashes and crashes into people on the ground. However, through 2017, the FAA granted 1,233 waivers to operate at night, and none resulted in an accident. In addition, potential risk of harm is the very focus of the regulations allowing flight over people. The FAA divided the proposed rules into three categories dependent on the severity of possible injury based on reports from the Micro UAS Aviation Rulemaking Committee. It tailored the proposed rules proportionate to the harm.

As drone use has proliferated, ethical and safety concerns have led the argument against them. Instead of increasing restrictions to address these concerns, the proposed rules invite drone operators to support and protect the community in order to balance the benefits.

Drones have unique capabilities; the proposed rules facilitate their ability to contribute beyond the commercial industry. Drones can go where humans cannot, move quicker, respond faster, cut costs and assume risks that would be much greater for humans or other equipment. Society will benefit if the use of drones expands so they can fly over people and at night.

**NOTES**

- <sup>1</sup> Damien Licata Caruso, *Notre-Dame: How Drones Helped Firefighters Against Fire*, LE PARISIEN, Apr. 16, 2019, <https://bit.ly/2EmJ5CL>.
- <sup>2</sup> 84 Fed. Reg. 3856, 3857 (2019).
- <sup>3</sup> Tom Jackson & Devin Hance, *How Delivery Drones Are Saving Lives in Rwanda*, FORTUNE, Jan. 7, 2019, <https://bit.ly/2SGx5RQ>.
- <sup>4</sup> Eric Adams, *UPS Drones Are Now Moving Blood Samples Over North Carolina*, WIRED, Apr. 1, 2019, <https://bit.ly/2FHfuE2>.
- <sup>5</sup> Stephanie Chan, *Drones and Disaster Relief*, Cisco (Aug. 27, 2018), <https://bit.ly/2Npaw1o>.
- <sup>6</sup> Michael Peck, *The Pentagon's Plan: Use Drones to Feed Hurricane Victims*, NAT'L INTEREST, Mar. 10, 2019, <https://bit.ly/2VQrLw6>.

- <sup>7</sup> *Drones Will Save the Environment. Here's How*, Dronegenuity, <https://bit.ly/2QeypL2>.
- <sup>8</sup> Ben Ratner, *Industry Momentum Builds for Nationwide Methane Regulation*, ENERGY EXCHANGE, Mar. 15, 2019, <https://bit.ly/2FiGkTD>.
- <sup>9</sup> Whitney Pipkin, *Drones Change the Way Advocates Protect the Environment*, MD. REP., Mar. 18, 2019, <https://bit.ly/2TOYhCy>.
- <sup>10</sup> *Permitting Scientific Research Using Small Unmanned Aircraft Systems*, NOAA Fisheries, <https://bit.ly/2QiYxEU>.
- <sup>11</sup> 84 Fed. Reg. at 3893.

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