COMMERCIAL DRONES

THE UNITED STATES MUST SPEED UP GLOBALLY COMPETITIVE REGULATIONS

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By 2035, the number of unmanned aerial vehicles in operation in the United States is expected to surpass the number of manned aircraft in operation. The US commercial drone market could easily be worth $5 billion, according to the Volpe National Transportation Systems Center, and the global commercial market may be several times greater.

Although the use of drones is relatively novel in the US, that is not the case with other developed countries. In Japan, for example, farmers have been using drones for decades to inspect crops. In Canada, police use drones for search-and-rescue operations. In the United Kingdom, drones are used for commercial photography. Yet in the US, such activities have been relatively rare because the Federal Aviation Administration (FAA) considers commercial drone usage illegal without special permission.

This past February, the FAA finally proposed regulations for commercial drones. Once the rules are finalized, the hope is that within a couple of years the US will be on par with many other countries. Already, the FAA has begun granting more exemptions for commercial drones, as well as blanket waivers for certain operators. (See Exhibit 1.) The US needs to continue to close its gap with other nations, or it risks leaving billions of dollars in economic growth on the table as drone service providers and customers take their business elsewhere.

TAKING THE LEAD

It is not too late for the US to take the lead. With more reasonable and globally competitive regulations, the US could still become a front-runner in this fast-changing, growing industry. The FAA is moving in the right direction by beginning to base rules on the actual risk that small, unmanned aircraft pose to the public. But the administration must go further. It's important for the FAA to develop the risk-based foundation for drone regulations – not just for the purpose of unleashing the US market but to guide that more heavily fraught regulatory issue: privacy.

The rationale for the distinction between recreational and commercial drone activities mirrors the manned aircraft world, where commercial pilots are responsible for transporting large numbers of passengers safely in large aircraft and are held to the highest level of experience and training. Recreational pilots are held to a lower standard in terms of experience because of the lesser potential for harm to life and damage to property. However, there is little difference whether smaller drones are used for commercial or recreational purposes, as the risks they pose are similar. In both cases, the drones are unmanned, and the risk of damage to people, property, or manned aircraft is low.

After struggling with this and other issues, the FAA found that the manned aircraft framework cannot be readily applied to commercial drones. For example, the agency dropped the idea of requiring drone operators to hold pilot licenses.

2035

The year that unmanned aerial vehicles in operation in the United States should surpass the number of manned aircraft

This is the same lesson that regulators in other countries have learned. The technology is moving too quickly; the field to be regulated is too new. Lower risk activities must be permitted sooner rather than later; incremental regulations must be released when ready, and then improved, so that the technology can be introduced safely as soon as is practical.

IMPROVED RISK ANALYSIS

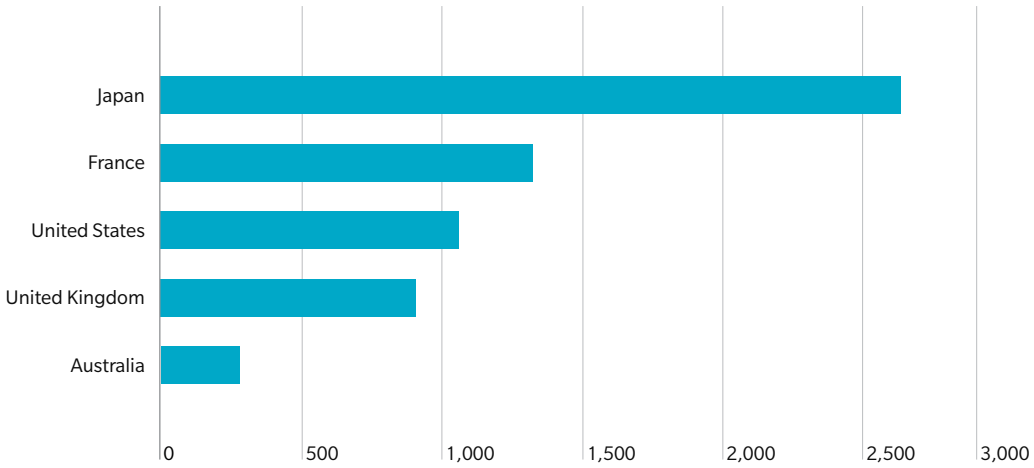
Still, the process is far from perfect, as a recent spate of near misses with unauthorized drones in US airspace shows. Regulators' use of risk-based language is not always accompanied by a serious risk analysis and ranking of different types of drone operations. For example, how can the FAA justify stricter safety requirements for commercial drones than for recreational drones, when both involve exactly the same operations, unless the answer is simply that the law requires it?

Many countries distinguish instead between heavier drones (typically, those weighing more than 55 pounds) and lighter drones. The smallest drones, weighing less than 4.4 pounds, are treated differently in some countries because they pose a much lower safety risk than larger drones. Most commercial drones weigh far less than 55 pounds and operate below commercial airspace.

The technology poses other conundrums for regulators to assess risk. For example, drones rely on shared, non-secure radio frequencies, and the radio link between the drone and its ground-based operator can be interrupted. Regulators worry about what could happen in the event of an interruption. Some drone manufacturers are addressing this issue by programming their drones to hover while waiting for the link to be re-established and to return to home base after a set period if a secure link is not re-established. Regulators and manufacturers continue to study solutions to the lost link issue.

EXHIBIT 1: GLOBAL COMMERCIAL DRONES: THE RACE IS ON

THE NUMBER OF REGISTERED COMMERCIAL DRONE OPERATORS IS RAPIDLY INCREASING WORLDWIDE



Source: Government data through August, Oliver Wyman analysis

The proposed FAA regulations conclude that even the smallest, lightest drones, those under 4.4 pounds, traveling beyond the line of sight of the operator (which would likely be the case in commercial operations) entail greater risk than heavier drones within the line of sight. But what is the true safety risk profile of different alternative operations under consideration? This rule would leave some highly anticipated activities, like package delivery, out of bounds.

DEVELOPING A TIERED SYSTEM

With a few modifications, the current airspace and regulatory structure may easily lend itself to drone operations. For example, current uncontrolled airspace could be approved for beyond-line-of-sight operations, while controlled airspace would be reserved to line-of-sight operations. Similarly, current regulations defining type of operation, including visual and instrument flight rules, could be applied to define when drone operations may and may not occur. And the current civil definition of flight operations, from light sport aircraft to commercial airline operations, lends itself to a tiered system of qualifications, regulations, and acceptable risks.

It is difficult to put a price tag on the lost opportunities in the US market resulting from regulatory constraints. However, the Association for Unmanned Vehicle Systems International estimates that each year of delay has a $10 billion economic impact for the US. We expect that once the FAA issues reasonable regulations, the US drone service providers will quickly catch up to their foreign competitors. Still, the first movers in other countries could achieve important short-term gains. At a minimum, they gain time to develop their brands in the market.

To catch up with the global drone industry, US regulators must stick to their plan of incremental rule updates that are risk-based and closely track industry developments.

This groundwork will be important as drone use becomes more widespread globally, and the public begins to call for strict privacy parameters. Typically, activities with lower safety risks, such as precision agriculture, oil and gas exploration, and wildlife conservation, have lower privacy risks because they are conducted in remote areas. The most sensitive concern is that people will use drones for surveillance or to fly over private property and transmit images. Privacy concerns will probably prove more difficult to manage than safety, and already some local authorities are issuing their own rules. Some privacy issues will certainly be covered by existing law, but there may be loopholes that regulators must catch as drones take to the skies.

US regulators should embark on a plan to catch up to global standards for prudent, risk-based regulations that meet these challenges. By doing so, the FAA can enable the safe deployment of new unmanned vehicles in the US without forcing the private sector to pay a steep price for its late start.

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