



Drones, like other flying objects, can be dangerous. Airplanes and helicopters are quite safe statistically, but even they occasionally have mishaps that destroy things and kill people. Helicopters and airplanes operate safely in a century-old web of customary practices and federal regulation of the aircraft, the pilots that fly them, and the procedures of businesses that fly them.

Now, the proliferation of drones available to small businesses and hobbyists with modest incomes threatens to overwhelm the aviation safety system. The biggest safety risk arises from the possibility of widespread noncompliance with FAA rules. In the near term, people may fly drones without bothering to get a section 333 exemption; in the longer-term, they may fly them without regard to the limitations in the FAA's final rule, at night, for example, or beyond line of sight.

If that occurs, all levels of government will come under pressure from the traditional aviation community and from the general public to do something about it.

Historically, aviation regulation has been predominately a matter for the federal government. Otherwise the differing views and political accommodations of thousands of units of state and local government would have thwarted the development of modern aviation.

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The FAA is gradually, ever so gradually, opening up the national airspace system to commercial drone flight – as it is commanded to do by the United States Congress. Almost 600 section 333 exemptions have been granted to individuals and (mostly small) business entities, allowing them to fly specific vehicles for specific types of missions. More than 4,000 comments on the FAA’s hundred-page proposed general rule are being processed by the FAA, which may result in a final rule being effective in a year or so. But what happens if all this proves to have a little effect on actual drone behavior?

What about reckless flight of drones purely for fun? The Congress has denied the FAA authority to regulate hobbyist and recreational use of drones—and that is where the greatest risks arise.

What about commercial operators who simply fly drones for customers and get paid, unwilling to wait several months for a section 333 petition to be processed, or to spend thousands of dollars to get a sport pilot’s license, as the exemptions require? Commercial applications were already commonplace while an across-the-board ban was in effect, before the first exemptions began to be granted in late 2014.

Airplane and helicopter regulations are poorly suited for drones. For example, the requirement that an airworthiness certificate be “displayed at the cabin or cockpit entrance so that it is legible to passengers or crew” doesn’t make any sense; neither does the requirement that someone plan and fly a solo cross-country flight of more than 150 miles in order to get a private pilot’s license to fly airplanes.

The FAA made matters worse, initially by announcing a ban on drone use for even the most trivial of commercial purposes, and more recently by burdensome and slow procedures for getting special permission to fly commercially while more general regulations are being worked out. It’s not the content of the new and proposed FAA drone rules that are the problem: they use a risk-based, incremental approach, allow small drones with modest capabilities to fly under conditions that mitigate risks before all the details are worked out for bigger vehicles. Many of the limitations that the FAA is imposing in its interim case-by-case section 333 exceptions are sensible as well: keeping drones flights below 400 feet, within the line of sight of the operator.

The problem is that is the combination of low cost, obvious utility to support many different commercial activities, and the absence of an easily accessible way to comply with the FAA regulations, has created a perfect storm. Few people obey arbitrarily low speed limits for expressways, and many make recreational use of marijuana despite its illegality—hundreds, maybe thousands of people.

The greatest danger to other activities in the sky and on the ground arises, not from the proliferation of drones; but from their lawless operation. There will never be enough FAA inspectors to catch everyone who violates federal drone rules. There will never be enough FAA lawyers to organize the evidence to give due process before monetary sanctions are imposed.

And then, there is the bizarre reality that one can do nothing for a commercial purpose with a \$1200 DJI Phantom drone without special permission, but someone else can do anything with the same vehicle as long as he does it only for fun. The 400 reported incidents of drone encounters with manned aircraft – most of them are mere sightings rather near misses—primarily involve hobbyist rather than commercial activity. Likewise, most of the more egregious instances of YouTube or Vimeo video showing drones flying recklessly, at high-altitude, and through clouds involve hobbyists.

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The breathtaking political power and energy of the model aircraft community can be seen in the hundreds of largely identical comments its members filed on the FAA’s proposed drone rulemaking. To be sure, the model airplane community has long established guidelines which the FAA has embraced in an advisory circular. But none of this is mandatory. Moreover, most of the new drone enthusiasts are not members of that community. The kinds of social forces that promote compliance with safety are absent for much of the recent drone activity; a realtor who impulsively buys one on Amazon is not likely already to be a member of a model airplane club, and he hasn’t been schooled in the FAA regulations and safe practices as part of the forty hours of experience required for a pilot’s license.

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There are a lot more cops than FAA inspectors, so the question becomes what powers state and local governments will exercise, given their singular lack of preparation. State and local law enforcement agencies may not enforce federal law directly, but they can enforce state statutes and local ordinances, including those already on the books that criminalize reckless endangerment of the public and refusal to obey a lawful order by an officer.

Under the Supremacy Clause of Article 4 of the United States Constitution, however, federal regulation displaces (“preempts”) state and local law, as it does with traditional aviation regulation. But preemption can occur only to the extent of federal power, under the Commerce Clause, in the case of aviation. If all drone activities constitute interstate commerce, the federal government can take over the field—most people assume it has already. The Commerce Clause may not, however, extend to drones flown at low levels for short distances. How does it affect interstate commerce if a farmer flies a drone over his back 40 acres? That’s a far cry from a commercial airliner taking the farmer from a nearby airport to Washington for a lobbying visit to his congressman.

Furthermore, under the decided cases, states and local governments have the authority, despite federal preemption of aviation safety, to regulate the location of airports. By logical extension, they have authority to regulate where drones take off and land, which is tantamount to regulating where they operate.

Even if the FAA were on top of the situation, state and local government authorities are not happy with the proposition that the FAA has exclusive jurisdiction over drone aviation. Not much thought has been given yet to the structure of a joint federal state regulatory regime that would allow local regulation of purely local activities without creating a quicksand of ill-conceived legal minutiae cranked out by every village council. Drones can extend the reach of aviation’s proven capacity to

improve life and productivity at every level of life; policymakers need to be careful that they do not make choices that strangle it in its infancy.

They also need to be careful that they do not erect such complicated legal requirements that drone operators just ignore the law. Opening the floodgates to state and local regulation would amplify the deficiencies of the present FAA frameworks.

The hard question is how the FAA, states, and municipalities can work together to frame appropriate rules and to pool their resources to enforce them. It will take a while to work all this out, even though quick action is needed to bring drone operators into the fold. One can envision a joint federal state initiative model loosely modeled on environmental and employment discrimination law. The federal government would set general minimum standards for everyone and fill in detailed requirements except where state legislatures decide to opt in and take on a measure of direct regulation themselves. The states would not be free to do anything they want: no state may grant local employers a privilege to discriminate against employees in ways not allowed by Title VII of the federal Civil Rights Act. But they could make choices about things like line of sight restrictions, the need for a separate visual observer, and operation of drones from ground vehicles. Also, as they already do in traditional aviation, they can impose liability for negligent operation resulting in injury as long, as the standards for liability are drawn from the federal rules.

Mechanisms for cooperation already exist. The National Association of Attorneys General has shown interest in the subject. The National Commissioners on Uniform State Laws has a long history of successful collaboration with other federal agencies. No concrete initiatives yet have emerged, however, from any of these institutional loci. It's time to get started; committee processes typically used in any coordinating mechanism are so slow and cumbersome.

What the FAA could do in the meantime is to prohibit the sale and distribution of drones unless they meet certain performance requirements relating to safe operations, such as automatic take off, hover, and landing; automatic return-to-home and land-immediately; and geo-fences that keep them away from airports. Then, the agency would not need to enforce – or even to have — detailed regulations about drone flight operations or DROP qualifications. Then, there would be less for enforcers to do, from whatever level of government. The drones themselves would obey the law, right out-of-the-box. If the purchaser wanted to fly them lawlessly, he could not.

This approach is not limited to any particular category of drone; it would work for the smallest and cheapest as well as the biggest and most expensive. What would vary is the amount of engineering detail that the FAA specifies; for small drones, posing less risk, it would leave more to private-sector designers and fabricators, while pressing down with a heavier hand on bigger vehicles capable flying hundreds of miles beyond the line of sight of the operator.

Drone technology itself is not the problem; it portends significant improvements in the effectiveness and reach of commerce and in the quality of life. The problem is a legal environment that is so restrictive that it has little effect on risks that it intends to reduce.

Everyone needs to think harder about how to accommodate regulation to reality.