

Testimony by Henry H. Perritt, Jr.
on proposed drone ordinance

Chicago City Council

Committee on Aviation

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Mr. Chairman and members of the committee:

Thank you for the opportunity to testify on this important subject. The proposed ordinance before you is a considerable improvement over the one originally introduced. It reflects the openness of the City Council and its staff to receive expert views from individuals and small businesses actually making use of the potential of this new technology.

Small unmanned aircraft systems—or drones, as everyone calls them—are the most important aviation technology development in several decades. They extend the reach of aviation to individuals and small businesses that have never been able to afford aerial imagery and monitoring technologies before. Chicago should embrace them rather than exiling them.

I am a professor of law and former dean at Chicago-Kent College of Law, the law school of Illinois Institute of technology. I have a bachelor's degree in aeronautical engineering from the Massachusetts Institute of Technology, and I am a commercial helicopter and private airplane pilot. Over the past three years my business partner, Eliot Sprague, and I have started a small business, Modovolate Aviation, LLC ("Movo Aviation") which has helped a variety of small businesses around the country understand the potential of drones, acquire equipment, and begin flying them commercially. As a member of the Illinois and District of Columbia bars, I represent several individuals and small businesses in seeking section 333 authorizations from the FAA and in developing their commercial drone business. Movo Aviation itself has a section 333 exemption. I have written or co-written more than a dozen magazine and law review articles on drone technology, economics, and law, and Mr. Sprague and I just completed a book on drones, scheduled for release by Ashgate Publishing sometime next year.

More than 2,000 individuals and small businesses who have received "section 333 exemptions" from the Federal Aviation Administration are flying drones commercially now, creating jobs and stimulating economic growth in many different applications, including precision agriculture, powerline, pipeline, railroad, and highway bridge inspection, real estate promotion, movie and television production, and newsgathering. They make aerial information collection for disaster relief and fire suppression safer than if helicopter or airplane pilots were exposed in dangerous flight profiles. Any small business can buy one and begin using it for less than the cost of one hour of helicopter time.

Any ordinance adopted by the city of Chicago must recognize this potential and channel drone use into these applications, accelerating deployment of the technology rather than retarding it.

Concerns exist, however, about the risks of widespread drone use. Some of these concerns are not backed up by objective facts; others deserve attention by public officials. Drones now on the market are very small. The popular DJI Phantoms weigh less than 3 pounds. They carry no inflammable fuel. If a crash occurs, the maximum damage that can be done is vastly less than if an airplane or helicopter crashes.

They have highly sophisticated on-board electronic systems that are capable of keeping them away from airports, limiting the height and speed at which they can fly, and which cause them to return to their launching point if there is a failure in GPS reception or an interruption of the radio control link between them and their operators.

The likelihood that they pose a serious threat to airline flights is a myth. The much talked about FAA database of reports of near misses has been revealed to be merely reports of drone sightings—or, more accurately, pilot sightings of *something* in the air, in one case characterized as a "flying dog."

Airliner engines, before they can be put into service, must pass certification tests in which an 8 pound bird is fired, at 200 knots, directly into the engine while it is running. A DJI Phantom—the most popular mass-marketed drone model—weighs less than half that and can fly only 1/16 as fast.

Still, the popularity of these vehicles, and the FAA's sluggishness in developing a regulatory regime designed around their flight profiles, their ease of operation, their

high levels of safety automation, and their utility has left a gap in which irresponsible operation is growing. Many commercial operators are flying them in defiance of the FAA's requirement to obtain a section 333 exemption. Thousands of ordinary citizens, largely ignorant of aviation regulation and safety practices, have bought them and are flying them, sometimes recklessly.

The draft ordinance reflects the following important principles:

- Aviation regulation is largely the exclusive prerogative of the federal government. The FAA has the sole power to regulate pilot and operator qualifications, vehicle design, and operating rules for aircraft. States and municipalities have no authority on on these subjects. States and municipalities, however, do have authority to legislate on traditional matters of local concern, including the use of public streets, parks, and other recreational facilities; to adjust the benefits and burdens of drone activities that injure persons or property, and to regulate infrastructure owned or controlled by the state or municipality.
- A need exists for a legal framework at the municipal level that will empower local law-enforcement officers to take action when they detect reckless and dangerous drone activities that violate local law or transcend the limitations imposed by the FAA.
- Many local commercial operators of drones have received authorization from the FAA, currently under section 333 exemptions, and eventually will be able to operate under comprehensive set of general rules formally proposed by the FAA in February of this year and expected to be finalized sometime next year. Chicago should not do anything to deprive them of the benefits of their authorizations or to increase their costs. Indeed such action by the city is preempted by federal law.
- Anyone should be allowed to fly a drone over his own backyard, at reasonable heights above the ground.
- Careful drone flight in parks and other public spaces is a legitimate recreational activity, for example to take pictures of one's family and friends having a picnic.
- A variety of long-standing and well organized model aircraft clubs exist, led by the Academy of Model Aeronautics. These clubs sponsor and carefully control model aircraft activities, including those involving drones. Such communities

should be able to operate in appropriate spaces in Chicago without undue restrictions.

- Drone operators should be required to avoid only those facilities on the ground that can be readily identified or which appear on aeronautical charts.

The biggest threat to public safety, including aviation safety, come from two quarters: commercial operators who fly without section 333 exemptions, in defiance of FAA rules, and casual users not associated with the model aircraft organizations who fly recklessly over crowds of people, at excessive heights, and near airports

This is where the City Council should focus its attention, prescribing rules for the recreational flights, which now are unregulated by the FAA, and ensuring that commercial scofflaws will be held accountable.

The FAA appears likely to impose a comprehensive registration system for all drones by the end of this year, and there is no need for a redundant registration system at the local level. Indeed, it probably will be preempted when the FAA implements its registration proposal.

The following features of the proposed ordinance are sound and are worthy of adoption:

1. It explicitly permits, and exempts from any new local restrictions, commercial drone flight under section 333 exemptions and under the eventual general FAA rule, but only for so long as the operator complies with the limitations imposed in the exemption and the rule
2. It prohibits commercial drone operations unless authorized by the FAA, and under limitations imposed by the FAA.
3. It exempts from any new local restrictions recreational drone flight conducted under the rules of model aircraft clubs and FAA guidelines for such flights, which largely mirror the Association of Model Aeronautics rules.
4. It permits drone flight over one's own property.
5. It explicitly makes it a municipal offense to violate FAA restrictions contained in section 333 exemptions or in general rules. The city may not enforce federal aviation rules directly, but it may internalize them into local law.

The following provisions of the draft are problematic and should be amended before enactment:

6. The sanctions section is too broad. It should impose a carefully graduated set of fines and other penalties for violation of the ordinance. A first-time offender who commits a technical violation should certainly not be subject to incarceration but instead be subject to a modest fine proportional to those imposed for minor motor vehicle violations or pet violations. Immediate seizure or impoundment of a drone in these circumstances, without a prior hearing, likely violates the Due Process Guarantees of the Fourteenth Amendment of the United States Constitution, and could subject the City to liability under 42 U.S.C. § 1983.

Repeat offenders, and those acting with wanton recklessness should be subject to much harsher penalties, possibly including incarceration, sufficient to get their attention, and sufficient to alter the economic calculus for commercial operators.

7. The “Whereas” section is unduly biased toward risks, some of which are merely reported and unsubstantiated. It should be amended to balance recitation of risks by greater emphasis on drones’ potential for aiding small business, and promoting economic development and job creation.
8. The prohibition against flying over or near electricity infrastructure facilities should be amended to limit the prohibition to facilities that can be identified as such from the ground.

As I have done over the past several weeks leading up to these hearings, I will continue to work with you and your staff to craft an ordinance that will hold Chicago out as the model of how local government should react to this new technology.

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