

Statement by Modovolate Aviation, LLC
on
U.S. Unmanned Aircraft Systems: Integration, Oversight,
and Competitiveness
for inclusion in the record of hearings
before the
Subcommittee on Aviation
Committee on Transportation and Infrastructure
U.S. House of Representatives
December 10, 2014

Modovolate Aviation, LLC (“Movo Aviation”) is an Illinois limited liability company engaged in research and development, testing, demonstration, consulting, and public education related to small Unmanned Aircraft Systems (“sUAS”), popularly known as “microdrones.” Its owners and managers are Henry H. Perritt, Jr. and Eliot O. Sprague. Mr. Perritt is a Professor of Law and former Dean at Chicago-Kent College of Law, the law school of Illinois Institute of Technology. He is a private airplane and helicopter pilot and is a respected scholar on administrative law and law and technology. Mr. Sprague is a full-time professional news helicopter pilot who flies daily in the airspace of the Chicago Metropolitan Area. Together, they have written a number of recent articles published by aviation and journalism magazines. One of the articles is attached as an addendum to this statement. Mr. Perritt, in his individual capacity as an attorney, is representing two private sUAS operators in section 333 petitions filed with the FAA. Movo Aviation has filed an application with the FAA for a Special Airworthiness Certificate to allow it to fly its sUAS. It has filed a comment supporting a Section 333 request by news photographer Colin Hinkle to fly his sUAS over the Chicago metropolitan area for aerial photography and news gathering. It also filed a petition for rulemaking with the FAA, urging it to adopt the regulatory approach proposed in this statement.

The advances in technology that have enabled strong but light composite structures, miniaturization of GPS guidance and navigation systems, autonomous flight-control systems, and video imaging have coalesced into sUAS products widely available for a few hundred to a few thousand dollars.

Hundreds of newspaper, magazine, and television stories, and hundreds of website and YouTube videos—many of which portray activities that almost certainly violate the FAA’s current ban—demonstrate how useful these small aerial devices can be in supporting real estate marketing, agricultural and construction-site surveying, electronic news gathering, public safety activities, infrastructure inspection, and, eventually, small package delivery. Realtors, construction contractors, powerline and pipeline operators, movie makers, reporters and photojournalists, law enforcement personnel, firefighters, and disaster-relief agencies are eager to get their hands on one.

This represents only the latest disruptive innovation for aviation in the United States, which is justly proud of a regulatory system that has accommodated successive innovations while keeping American skies safe. The sUAS phenomenon, however, is different in that it puts aircraft in the hands of almost anyone, including many people with no ties to the aviation community. Many people now flying sUAS have no awareness of the FAA, its regulations, or of the communities of pilots, mechanics, and operators who have been trained intensively on safe practices.

Movo Aviation and its pilot owners are concerned about the risk that uncontrolled proliferation of drone flight presents. As a small technology enterprise, Movo Aviation is also enthusiastic about the potential for sUAS. It is concerned that the FAA is not thinking about the problem in the right way. The central flaw in much of the public debate about drones is a failure to distinguish between microdrones and machodrones. Microdrones are the little ones that anyone can buy from Amazon and fly right out of the box. These are consumer products, not 787s. Their low weight, range, and altitudes present much lower risks than flight of larger ones. The risk does not change depending on whether they are being flown for fun or for money.

A risk-based approach, already implemented by Canada, France, Australia, and the UK, among others, recognizes that assuring safe operation of sUAS depends on a close assessment of the risks associated with different types of vehicles and differences in the places where they operate. To be sure, the National Airspace System (“NAS”) of the

United States is vastly more complex than that of many other countries, but sUAS do not operate in the NAS in general; they operate locally, in very small areas, almost always close to their operators.

Everyone is eagerly awaiting the FAA's release of a proposed rule for sUAS. Having missed its statutorily mandated deadline of August, 2014, the FAA now promises to have a Notice of Proposed Rulemaking ("NPRM") out before the end of the month. The FAA recently declined to consider Movo Aviation's petition for rulemaking, instead making it part of the docket for comment during the comment period for the NPRM. General statements by FAA personnel raise concerns that the content of the proposed rules will not be well-suited to reality. The FAA is trying too hard to stuff the square peg of sUAS into the round hold of traditional manned aircraft regulation.

sUAS have already outrun traditional FAA regulation. The FAA's ban on commercial flight is largely a dead letter. The problem will only get worse the longer the FAA waits to get regulations in place, and the bigger the gap between the content of the eventual regulations and reality.

No conceivable level of enforcement resources for the FAA will enable it to apply traditional aviation regulation to sUAS. Traditional airworthiness certification for aircraft, pilot certification taking years and costing tens to hundreds of thousands of dollars, and thousands of pages of operating rules are unsuitable for devices that cost only a thousand dollars and fly low-level, close-in, missions a few hundred feet above the ground within a few hundred yards of a human operator

For the FAA to have any hope of controlling microdrones, it needs to think small. No one is going to spend thousands of dollars getting a traditional pilot's license, let alone \$20 million to get an airworthiness certification for these vehicles.

The FAA must recognize that these are consumer products, not multi-million-dollar capital assets. The leverage over pilot certificates, aircraft registration, and operator certificates available to reinforce rules for traditional airplanes and helicopters is entirely lacking in the sUAS world. The FAA must borrow strategies from regulatory agencies that have long experience in regulating consumer electronic devices, lawnmowers, and automobiles. The FCC, the CPSC, and the NHTSA recognize that the key to success is to focus on the point of sale as the choke point in the marketplace, not to try to oversee the details of thousands of operators and operations. One cannot buy a

lawnmower unless it has certain safety features built in. One cannot buy a WiFi point of presence unless it has been designed to minimize RF interference. One cannot buy an automobile unless it has seatbelts and flashers.

The only viable regulatory approach is to regulate microdrones like this--at the point of sale, taking advantage of their existing capabilities to restrict where they fly and to return to their launching points safely if some kind of failure occurs. Elaborate requirements for operators, vehicle design, and detailed flight rules, are unnecessary. Let the technology make them law abiding, right out of the box.

This approach to assure that microdrones be law-abiding need not involve further delay. The vast majority of sUAS now on the market come equipped with avionics and flight-control systems that limit sUAS operations to minimize risk. To be sure they have been designed to military and international aviation systems standards. But maybe they do not need to be. The FAA's commitment to performance-based regulation should focus on what actual products can do; not on detailed specifications developed through cumbersome international consultation.

The FAA can ease its burden and accelerate the availability of benefits of sUAS technology by issuing an interim rule that would allow anyone to fly an sUAS for any legal purpose as long as its avionics can be programmed to limit flight altitudes to no more than 400 feet AGL and to return to its launching point if the aircraft tries to fly into class B, C, or D airspace, if it loses its control link, if it loses GPS capability, or if its operator becomes unresponsive. The most popular sUAS products now on the market already have these capabilities.

Only with much more extensive data than is now available, can the FAA determine whether this approach adequately reduces risk. A risk-based and performance-based approach to regulation requires data on failure rates, failure modes, and hazards resulting from failure. This can only be developed through widespread experience with actual operational flight of sUAS, whose weight and performance characteristics involve minimal risk even if things go wrong.

This does not mean tolerance for reckless operation. Local criminal law and tort-liability, backed up by the FAA's authority under 14 C.F.R. § 91.13(a) to impose penalties for reckless or careless operation of aircraft, reaffirmed by the National Transportation Safety Board's ("NTSB's") decision in *Huerta v. Pirker*, NTSB Order No.

EA-5730, Docket CP-217 (Nov. 18, 2014), offer legal protection for now, while experience is gained. This legal regime provides adequate enforcement authority to impose penalties against sUAS operators who fly their aircraft in disregard of their features to assure safe operation.

American law works best when it tailors itself to the realities of innovation and entrepreneurship in a market-based economy. Law should not try to be out in front of technology, based on guesses and fears of what harm new and untried technology might do. It should stand in the background, waiting to see what engineers and entrepreneurs actually do with the technology. Some worries may prove unwarranted because economics discourages risky or unproductive activities. Then it should wait a little longer to see what disputes or hazards actually emerge as new products become more pervasive. Then, regulators and lawmakers should monitor how courts and insurance carriers handle these problems. Only when they can identify shortcomings in how the decentralized, private, marketplace is responding, are they ready to write law. A complete laissez-faire approach to sUAS may not be politically feasible, but a sound regulatory regime, one that has any hope of being enforceable, will get out of the way and see what actually happens in the real world.

Respectfully submitted,

Henry H. Perritt, Jr., Chief Executive Officer

hperritt@gmail.com

Eliot O. Sprague, Chief Operating Officer

eosprague@gmail.com

Modovolate Aviation, LLC

1131 Carol Lane

Glencoe, IL 60022