

# ANTONELLI LAW

Drone/UAS Practice Group

100 North LaSalle Street  
Suite 2400  
Chicago, IL 60602  
Tel. 312.201.8310  
Fax. (888) 211-8624  
[jeffrey@antonelli-law.com](mailto:jeffrey@antonelli-law.com)

December 10, 2014

Via Personal Delivery and FAX:

US Senator Richard Durbin  
230 South Dearborn, Suite 3892  
Chicago, 606041483

US Senator Mark Kirk  
230 South Dearborn, Suite 3900  
Chicago, IL 60604

U .S. Congressman Danny K. Davis  
2746 West Madison Street  
Chicago, Illinois 60612

U.S. Congressman Luis Gutiérrez  
3240 W. Fullerton Ave  
Chicago, IL 60647

Dear Senators Durbin and Kirk and Congressmen Davis and Gutiérrez,

I am writing regarding the FAA requiring a private pilot's license in its upcoming NPRM sUAS (Small Unmanned Aircraft System) aka commercial drones and also continuing to require it in the very limited exemptions it has allowed pursuant to Section 333 of the 2013 FAA Reform Act.

New tech jobs in Chicago and Illinois as well as many small businesses doing infrastructure, precision agriculture, photography, and other work enabled by these small UAVs are at risk. I would be happy to speak with you in person the next time you are in Chicago and even bring my own personal "drone" for your own observation, it is small (about 1 foot across) and weighs only about 3 pounds. Finally, the FAA today did not dispel the notion that they may require a farmer to have a private pilot's license to fly a small UAS over their own fields. Clearly, your help to create a commonsense exemption is needed.

**Transportation and Infrastructure Committee Chairman Bill Shuster clearly indicated today in his remarks during the U.S. Unmanned Aircraft Systems: Integration, Oversight, and Competitiveness that requiring a**

pilot's license for these small UAS is completely unnecessary.

I ask that you please address and obtain relief from the private pilot requirement FAA is imposing for very small UASs.

FAA is currently stating:

"Although Section 333 provides limited statutory flexibility relative to 49 USC § 44704 for the purposes of airworthiness certification, it does not provide flexibility relative to other sections of 49 USC. The FAA does not possess the authority to exempt from the statutory requirement to hold an airman certificate, as prescribed in 49 USC § 44711."

However, as the Small UAV Coalition states:

"Even if section 333 were read not to convey that discretion, the FAA has sufficient waiver and exemption authority in the Federal Aviation Act. Subsection (f) of section 44701 provides the Administrator with plenary authority to grant an exemption from a requirement of a regulation prescribed under subsection (a) or (b) of this section or any of sections 44702-44716 of this title if the Administrator finds the exemption is in the public interest. The statutory requirement for an airman certificate is section 44703.

**Accordingly, the FAA has discretion to waive or exempt the pilot certification requirement with respect to small UAS operators and should do so here.** The manifold innovative UAV technologies, particularly for small UAVs, should not be subject to a one-size-fits-all paradigm." (emphasis added)

The Small UAV Coalition members include Aerialtronics, Airware, Amazon Air, DJI, Google, GoPro, and others.

### **The Role of UAS Creating Jobs**

The nascent commercial drone industry in the United States, which is now flourishing in Canada, will not create the huge number of good jobs and leadership position in the world economy if the FAA is allowed to continue to impose this unreasonable requirement of a private pilots license for small UAVs (less than 55 pounds) especially for very small UAVs at low altitudes.

Sitting in the Senate Appropriations Committee's Defense subcommittee, you already know that Department of Defense contractors are facing sequestration and hope to use their technology to enter the civilian commercial drone market. What you may not already know is that thousands of able, intelligent, safety-minded individuals from Silicon Valley to Maryland are waiting on a green light from the FAA to create the technology and good jobs for a thriving commercial sUAS industry.

According to a report published by the Association for Unmanned Vehicle Systems International (AUVSI), within the first three years of sUAS integration in the NAS (National Airspace System), more than 70,000 jobs will be created in the United States and will have an economic impact of more than \$13.6 billion. AUVSI predicts that by 2025, more than 100,000 jobs will be created and have an economic impact of \$82 billion.

We are eagerly awaiting the FAA's Notice of Proposed Rulemaking (NPRM) regarding integrating UASs (unmanned aerial systems) into the national airspace. sUASs will also make many jobs safer. For example, we have filed a Section 333 Exemption Petition on behalf of a client who plans to use a sUAS that weighs under 15 lbs., to monitor oilfields and natural gas well pads. Previously, this job would have taken two men several hours and posed several serious risks, including catching on fire, inhalation of nasty gasses, and heat related illnesses. With the use of a sUAS, our client would be able to do the same amount of work in 15 minutes or less without nearly the amount of risk.

### **Research from FAA and Army Research Laboratory Shows No Pilots License Necessary**

In addition to my personal discussions with manned aircraft pilots, including those who also fly radio controlled model aircraft, **both FAA and Army Research Laboratory research demonstrate that UAS, even those much larger than the small UAVs most commercial entities propose to use (55 pounds or less) can be safely flown by non-certificated pilots with a small amount of training.**

I am concerned that the FAA will limit the potential for this new industry by requiring commercial sUAS operators to have the same pilot licensure as an individual flying commercial aircraft. I believe that this is the wrong route to take. As a hobbyist in the field, I know that the skills needed to control a device that can fit into the trunk of my car are very different than the skills needed to fly a Boeing 777.

Through the course of researching this topic, I have found three studies – one from the FAA and two from the Army Research Laboratory – that demonstrate that sUAS can be safely flown by non-certified pilots with a small amount of training.

The first Army Research Laboratory study stated:

**"[T]he specific motor skills needed to control the radio-controlled UAV [unmanned aerial vehicle] would have to be learned by aviators independently of the motor skills learned in flying an aircraft. In particular, the somatic and visual cues that pilots use during aircraft landings would not be useful (and perhaps even counter-productive) for the different skill**

sets and perceptual viewpoint necessary for radio-controlled landings." Michael J. Barnes, Beverly G. Knapp, Barry W. Tillman, Brett A. Walters & Darlene Veliki, *Crew systems analysis of unmanned aerial vehicle (UAV) future job and tasking environments*, Technical Report ARL-TR-2081, Aberdeen Proving Ground, MD: Army Research Laboratory, page 12 (2000).

The second Army Research Laboratory study stated:

"Using the Army's Job Assessment Software System (JASS), Barnes, et al (2000) elicited Hunter UAV operators ratings of the relative importance of various cognitive skills in UAV air vehicle operators. Ratings indicated that outside of communication skills, raters did not consider flight-related skills of great importance to UAV operations, leading the authors to conclude that selection of rated aviators as air vehicle operators would be of little value." Jason S. McCarley & Christopher D. Wickens, *Human Factors Implications of UAVs in the National Airspace*, 13 (2004), available at <http://www.tc.faa.gov/logistics/grants/pdf/2004/04-G-032.pdf>, citing Barnes, *supra*.

Finally, the FAA itself stated:

"We know that certain systems, like the U.S. Army Hunter and Shadow systems, are successfully flown by pilots with no manned aircraft experience."<sup>1</sup> Kevin W. Williams, *Unmanned Aircraft Pilot Medical Certification Requirements*, Report DOT/FAA/AM-07/3, FAA Civil Aerospace Medical Institute, page 2, (2007), available at <http://fas.org/irp/program/collect/ua-pilot.pdf>.

I have enclosed copies of all three studies for your review.

Requiring a private pilot's license to fly a device that does not carry passengers significantly increases the amount of time and money that a small business owner will need to invest into the enterprise, in order to contain skills that are irrelevant to the device they will fly. **This will crush this nascent industry.**

For example, under 14 C.F.R. Part 61, for an individual to obtain a commercial pilot certificate with an airplane category and single-engine class rating, that individual will need to complete 250 hours of pilot time, which includes:

- 100 hours in powered aircraft, of which 50 must be in airplanes;
- 100 hours of pilot-in-command flight time, which includes:
  - 50 hours in airplanes; and

---

<sup>1</sup> The authors speculated that UAV use in populated areas may change this assessment, indicating further research was needed to address this concern. I am a firm believer in flying these devices safely and away from people – I do not support having amateurs flying these devices down Michigan Avenue.

- 50 hours in cross-country flight of which at least 10 hours must be in airplanes.
- 20 hours of training with an instructor, which includes
  - 10 hours of training in an airplane that has a retractable landing gear, flaps, and a controllable pitch propeller, or is turbine powered.
  - Cross-country flights:
    - One 2-hour cross-country flight in a single engine in daytime conditions that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure;
    - One 2-hour cross-country flight in a single engine in nighttime conditions that consists of a total straight-line distance of more than 100 nautical miles from the original point of departure
  - Three hours in a single-engine airplane with an authorized instructor in preparation for a practical test.
- 10 hours of solo flight, including:
  - One cross-country flight of not less than 300 nautical miles total distances, with landings at a minimum of three points, one of which is a straight-line distance of at least 250 nautical miles from the original departure point;
  - Five hours in night visual-flight-rules conditions with 10 takeoffs and 10 landings (with each landing involving a flight in the traffic pattern) at an airport with an operating control tower. (See 14 C.F.R. §61.129).

First, the skills required by the holder of a private pilot license (certificate) are different than those required by a sUAS operator. Many sUASs do not have retractable landing gear, flaps, or a controllable pitch propeller. Many sUAS operators are not interested in flying their device 100 nautical miles away – in fact, many sUASs cannot travel more than a mile away from the point of origin, and the FAA does not allow for model aircraft to fly beyond the line of sight of the operator. Moreover, most sUAS flights will be several miles away from Air Traffic Control.

Second, achieving a private pilot's license can take many months and can cost upwards of \$15,000, after an individual goes through the necessary training on an aircraft that individual does not intend to fly.

Please consider helping the budding drone/UAS industry by preventing the FAA from imposing an arbitrary and irrelevant requirement upon its operators.

Thank you,

Jeffrey J. Antonelli

Enclosures only via in-person delivery due to volume