



November 17, 2015

TO: Members, Subcommittee on Commerce, Manufacturing, and Trade

FROM: Committee Majority Staff

RE: Hearing entitled “The Disrupter Series: The Fast-Evolving Uses and Economic Impacts of Drones”

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## **I. INTRODUCTION**

On November 19, 2015, at 10:15 a.m. in 2123 Rayburn House Office Building, the Subcommittee on Commerce, Manufacturing, and Trade will hold a hearing entitled “The Disrupter Series: The Fast-Evolving Uses and Economic Impacts of Drones.”

## **II. WITNESSES**

- Joshua M. Walden, Senior Vice President & General Manager, New Technology Group, Intel Corporation;
- John Villasenor, Professor of Public Policy and Electrical Engineering, University of California, Los Angeles, Luskin School of Public Affairs;
- Brian Wynne, President and CEO, Association for Unmanned Vehicle Systems International (AUVSI); and
- Margot Kaminski, Assistant Professor, Moritz School of Law, Ohio State University.

## **III. BACKGROUND**

The popularity of unmanned aerial systems (UAS), colloquially known as “drones,” has skyrocketed in recent years as commercial and consumer uses for them have developed. This year, the Consumer Electronics Association predicts that at least 700,000 recreational drones will be sold, and they are sure to be a popular gift around this holiday season.<sup>1</sup> That represents a 63 percent increase over the previous year.<sup>2</sup>

Drones come in all shapes and sizes. The largest—such as the Northrup Grumman Global Hawk—can weigh thousands of pounds, and the smallest are about the size of a quarter. Some are fixed wing, but a common design includes several helicopter-style propeller blades evenly

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<sup>1</sup> <https://www.ce.org/News/News-Releases/Press-Releases/2015-Press-Releases/New-Tech-to-Drive-CE-Industry-Growth-in-2015,-Proj.aspx>

<sup>2</sup> *Id.*

spaced to allow the aircraft to hover steadily. The range in physical attributes reflects the wide spectrum of drone uses.

As part of its effort to integrate commercial drones into the national airspace system (NAS), the Federal Aviation Administration (FAA) put forth a plan to set up a registry of drone owners and operators.<sup>3</sup> As reports surfaced of recreational drones interfering with firefighters and other manned aircraft users, the FAA announced on October 18, 2015, that it would require not only commercial, but also recreational users to register their drones.<sup>4</sup> To inform the rulemaking process, the agency held stakeholder meetings from November 3 through 5, 2015; these meetings must produce recommendations by November 20, 2015. The Department of Transportation has indicated its intent for the registry to be functional before Christmas, which is expected to bring a wave of consumer drone purchases.<sup>5</sup>

### A. Commercial Uses

Under current law, commercial drone use is illegal pending the completion of a FAA rule. However, the FAA has made available a process by which the operator who is expected to fly the drone may obtain a special waiver under Section 333 of the FAA Modernization and Reform Act of 2012 (FAA Act).<sup>6</sup> Based on a recent tally of permits issued, the most popular commercial drone uses are real estate (153), aerial surveillance (128), aerial photography (125), agriculture (106), and aerial inspection (86).<sup>7</sup>

Major retailers are expected to begin rolling out drone platforms to deliver packages.<sup>8</sup> At this point, though, no commercial actor has received a waiver allowing for drones to be operated beyond line-of-sight or for several drones to be operated by one person, two contexts that may be critical to making the use case work. Real estate brokers who have a Section 333 waiver use drone photography instead of paying more for images captured by helicopters.<sup>9</sup> Drones could also become a commonly used property maintenance tool and are expected to be useful for residential properties as well as a means of capturing scale and detail of large commercial areas such as malls and office parks. Drones are also expected to help farmers by allowing them to gather detailed data on crops, pests, moisture, yield, and soils. Using infrared imagery, farmers will be able to target the precise locations of weed and insect emergence instead of treating entire

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<sup>3</sup> Fed. Aviation Admin., Operation and Certification of Small Unmanned Aircraft Systems, Notice of Proposed Rulemaking, Docket No. FAA-2015-0150, available at [https://www.faa.gov/regulations\\_policies/rulemaking/recently\\_published/media/2120-AJ60 NPRM 2-15-2015\\_joint\\_signature.pdf](https://www.faa.gov/regulations_policies/rulemaking/recently_published/media/2120-AJ60 NPRM 2-15-2015_joint_signature.pdf).

<sup>4</sup> Craig Whitlock, "Federal Regulators to Require Registration of Recreational Drones," WASH. POST (Oct. 19, 2015), available at [https://www.washingtonpost.com/world/national-security/federal-regulators-to-require-registration-of-recreational-drones/2015/10/19/434961be-7664-11e5-a958-d889faf561dc\\_story.html](https://www.washingtonpost.com/world/national-security/federal-regulators-to-require-registration-of-recreational-drones/2015/10/19/434961be-7664-11e5-a958-d889faf561dc_story.html).

<sup>5</sup> *Id.*

<sup>6</sup> FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, Sec. 333, available at <http://www.gpo.gov/fdsys/pkg/PLAW-112publ95/pdf/PLAW-112publ95.pdf>.

<sup>7</sup> Bart Jansen, "Aerial photos, surveys most popular business uses for drones, industry finds," USA TODAY (Jul. 30, 2015), available at <http://www.usatoday.com/story/news/2015/07/30/drone-uses-real-estate-photography-agriculture-utility-inspection/30873647/>.

<sup>8</sup> See AMAZON, AMAZON PRIME AIR, available at <http://www.amazon.com/b?node=8037720011>.

<sup>9</sup> BILL CANIS, UNMANNED AIRCRAFT SYSTEMS (UAS): COMMERCIAL OUTLOOK FOR A NEW INDUSTRY 10, CONG. RESEARCH SERV., R44192 (Sept. 9, 2015).

plots.<sup>10</sup> The return on investment in drone platforms according to the American Farm Bureau is expected to be significant for the agriculture industry.<sup>11</sup>

### B. Recreational Use

Meanwhile, Section 336 of the FAA Act established that recreational drone use is legal, so long as an aircraft is “operated in accordance with community-based guidelines;” involves a UAS of 55 pounds or less; is conducted in a way that does not interfere with manned aircraft; and avoids flying within five miles of an airport unless certain prior notice is given.<sup>12</sup> Section 336 specifically prohibits the FAA from promulgating rules regarding “model aircraft,”<sup>13</sup> if the conditions above are met.

### C. Federal Activity

In tandem with its registry proposal, the FAA is working on broader rules to integrate commercial drone use into the NAS. The FAA expects to finalize these rules in June 2016.<sup>14</sup> To inform its rules, the FAA has established three Pathfinder programs, which will examine how to safely operate drones in contexts that are currently outside the scope of legal drone uses.<sup>15</sup>

As the FAA began its drone rulemaking process in 2012, several privacy groups led by Electronic Privacy Information Center (EPIC) petitioned the agency to address privacy issues.<sup>16</sup> However, the FAA dismissed the petition, determining in its proposed rules that it lacks jurisdiction over privacy.<sup>17</sup> The drone privacy issue was taken up by the National Telecommunications and Information Administration (NTIA), which is conducting a multi-stakeholder working group process to examine the issue and produce industry best practices.<sup>18</sup> The next NTIA meeting is scheduled for November 20, 2015.

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<sup>10</sup> *Id.*

<sup>11</sup> American Farm Bureau Federation and Measure/Informa Economics, *Fact Sheet: Quantifying the Benefits of Drones in Precision Agriculture*, July 21, 2015, available at <http://www.measure.aero/wp-content/uploads/2015/07/AFBF-Fact-Sheet.pdf>.

<sup>12</sup> FAA Modernization and Reform Act of 2012, Pub. L. No. 112-95, Sec. 336, available at <http://www.gpo.gov/fdsys/pkg/PLAW-112publ95/pdf/PLAW-112publ95.pdf>.

<sup>13</sup> *Id.*

<sup>14</sup> David Morgan, “FAA expects to clear U.S. commercial drones within a year,” REUTERS (Jun. 17, 2015), available at <http://www.reuters.com/article/2015/06/17/us-usa-drones-congress-idUSKBN0OX1P020150617#MIBvT1wysg0VoK3c.97>.

<sup>15</sup> FED. AVIATION ADMIN., FOCUS AREA PATHFINDERS, available at [https://www.faa.gov/uas/legislative\\_programs/pathfinders/](https://www.faa.gov/uas/legislative_programs/pathfinders/).

<sup>16</sup> Letter from Amie Stepanovich, National Security Counsel, Electronic Privacy Information Center, to Michael P. Huerta, Acting Administrator, U.S. Federal Aviation Administration (Feb. 24, 2012), available at <https://epic.org/apa/lawsuit/EPIC-FAA-Drone-Petition-March-8-2012.pdf>.

<sup>17</sup> Fed. Aviation Admin., Operation and Certification of Small Unmanned Aircraft Systems, Notice of Proposed Rulemaking, 80 Fed. Reg. 9544 (Feb. 23, 2015), available at <http://www.gpo.gov/fdsys/pkg/FR-2015-02-23/pdf/2015-03544.pdf>.

<sup>18</sup> NAT’L TELECOMM. & INFO. ADMIN., MULTISTAKEHOLDER PROCESS: UNMANNED AIRCRAFT SYSTEMS, available at <http://www.ntia.doc.gov/other-publication/2015/multistakeholder-process-unmanned-aircraft-systems>.

#### D. State Activity

State law generally regulates privacy and trespass on property, two bodies of law that have come into play with regard to drones. For example, intrusion upon seclusion and publication of private facts are generally recognized tort causes of action protecting privacy.<sup>19</sup> The extent to which these causes of action can deter harmful drone use is likely to be the subject of debate. Trespass laws also vary from state to state, but generally prohibit unauthorized entry onto property. For example, in Oregon it is illegal for someone to “enter or remain in or upon premises . . . when the entrant is not otherwise licensed or privileged to do so.”<sup>20</sup> Whether a low-flying drone may be found to have entered or remained “in or upon” certain premises is, at this point, an open question.

State legislatures have also been very active this year on drones. According to National Conference of State Legislatures, 45 states have considered 168 bills regarding drones in 2015, although many of these provisions cover public sector uses of drones as opposed to commercial or recreational.<sup>21</sup> In one instance, the Texas legislature introduced a bill to permit individuals in certain professions to take pictures using drones, but only if no individual is identifiable in the image.<sup>22</sup> In another example, Michigan introduced a bill prohibiting a drone from being used to interfere with or harass a hunter.<sup>23</sup>

#### IV. ISSUES

The following issues may be examined at the hearing:

- What commercial uses exist for drones currently? What types of uses are expected to be developed in the next five years?
- What kinds of technology are being developed to address safety issues?
- What kinds of technology are being developed to address privacy issues?
- What should policymakers do to encourage greater investment in drone platforms and technology?
- What outreach is being done to educate casual users and hobbyists about how to safely fly their drones?
- Do commercial drones and recreational drones present separate policy issues? How easy is it to differentiate between recreational and commercial drones?

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<sup>19</sup> See RESTATEMENT (SECOND) OF TORTS §§ 652A-652E (1997).

<sup>20</sup> Or. Rev. Stat. 164.205(3)(a) (West 2012).

<sup>21</sup> NCSL, CURRENT UNMANNED AIRCRAFT STATE LAW LANDSCAPE, available at <http://www.ncsl.org/research/transportation/current-unmanned-aircraft-state-law-landscape.aspx>.

<sup>22</sup> *Id.*

<sup>23</sup> *Id.*

**V. STAFF CONTACTS**

If you have any questions regarding this hearing, please contact Paul Nagle or Graham Dufault of the Committee staff at (202) 225-2927.