STATEMENT OF MICHAEL WHITAKER, DEPUTY ADMINISTATOR, FEDERAL AVIATION ADMINISTRATION, BEFORE THE HOUSE OVERSIGHT AND GOVERNMENT REFORM COMMITTEE, ON DRONES: THE NEXT GENERATION OF COMMERCE? JUNE 17, 2015.

Chairman Chaffetz, Congressman Cummings, Members of the Committee:

Thank you for the opportunity to appear before you today to discuss the status of the safe integration of Unmanned Aircraft Systems (UAS) into the National Airspace System (NAS).

The Federal Aviation Administration (FAA) is safely and steadily integrating UAS into the largest, most complex aviation system in the world. At the same time, UAS technologies continue to advance at a rapid pace. We are working diligently to develop a regulatory framework that will allow for innovation while ensuring the safety of other users of the airspace and people and property on the ground.

The FAA Modernization and Reform Act of 2012 (2012 Act) established the framework for the integration of UAS into the NAS and tasked the FAA with the safe integration of civil UAS into the system by October 2015. We followed through with Congress' intent in the 2012 Act and completed milestones forming the foundation for future integration. This includes long-term planning for the future of integration, including a small UAS Notice of Proposed Rulemaking (NPRM), collaborative research and development with interagency partners and with industry, and the establishment of test sites and airspace for UAS research and development and testing.

Consistent with the authority in section 333 of the 2012 Act, the Department and FAA are issuing exemptions that allow for commercial activity in low-risk, controlled environments. The initial exemption process took longer than we liked. After gaining experience with various types of operators, the FAA recently expedited its approach for section 333 exemptions. We are now

able to issue summary grants when we find that we've already granted a similar exemption. Summary grants are more efficient because they do not require applicants to repeat analysis that has already been performed. This streamlined approach now allows the FAA to issue between 40 and 50 section 333 exemptions a week.

As part of this new approach, the FAA grants a blanket Certificate of Waiver or Authorization (COA) for flights at or below 200 feet when it issues the section 333 exemption. This applies to aircraft that weigh less than 55 pounds, operate during daytime Visual Flight Rules (VFR) conditions, operate within visual line of sight (VLOS) of the pilots, and stay certain distances away from airports or heliports. Operators wishing to operate above 200 feet would need to request a separate COA.

From the outset, we have worked closely and successfully with government partners and industry stakeholders to achieve milestones put forward by the 2012 Act. In coordination with other governmental agencies and industry, we developed two long-term planning documents, the Comprehensive Plan and a five-year Roadmap. We have worked with members of the UAS Executive Committee (ExCom) to leverage our collective assets and conduct research and development on UAS integration while ensuring the continued safety of the NAS. The FAA collaborated with the National Aeronautics and Space Administration (NASA) on studies advancing air traffic control interoperability with future use by UAS of detect-and-avoid (DAA) systems in controlled airspace. We continue to collaborate with the industry on flight tests to validate RTCA[1] standards for DAA systems as well as command and control radios. RTCA began work on the standards at the request of the FAA in 2013 and they are scheduled for

[1] RTCA, Inc. is not-for-profit organization that serves as a federal advisory committee to the FAA. *See* http://www.RTCA.org.

completion in 2016. These standards will help resolve two of the difficult challenges facing the industry for integration of UAS into the NAS. NASA, the FAA, and industry partners have successfully demonstrated a proof-of-concept airborne DAA system and prototype radios for use as command and control systems for UAS.

In November 2012, the FAA released its Arctic Implementation Plan to establish permanent operational areas and corridor routes in the Arctic for the operation of small UAS as required by the 2012 Act. In July 2013, a restricted category type certificate was issued to Insitu's ScanEagle X200 and to AeroVironment's PUMA so that each UAS could conduct Arctic flights for commercial purposes. In September 2013, ConocoPhillips began using Insitu's ScanEagle for its marine mammal and ice surveys. In June 2014, BP began using AeroVironment's Puma AE to survey its pipelines, roads, and equipment at Prudhoe Bay, Alaska. Safety and operational data from these flights will be used to develop UAS operations and performance standards. The FAA has also issued 176 special airworthiness certificates in the experimental category for civil UAS, 34 of which are currently active. Special airworthiness certificates are issued for research and development, crew training, and market surveys.

In December 2013, the FAA selected six test sites for non-federal entities to test UAS technology and operations. All of the UAS test sites, which were selected based on geographic and climatic diversity, were operational by September 2014. They will help us gather operational data to foster further integration. Flights of unmanned aircraft have already been conducted, including flights for research on agricultural and wildlife monitoring and on law enforcement and emergency services support.

Test sites are providing data about the types and sizes of aircraft, number of operations, number of flight hours, notable operating parameters (for example, whether the flight was within or beyond visual line of sight), and any incidents and accidents. Each site has also established its own research agenda. A significant portion of test site data analysis is being performed at the FAA William J. Hughes Technical Center. Qualified FAA personnel are visiting each UAS test site to evaluate how data is captured and maintained, ensure the integrity of data transferred to the FAA, and determine whether additional data collection would help the FAA meet its research objectives. The FAA also invited public comment in the proposed small UAS rule (discussed in more detail below) on how the agency can improve or further leverage its test site program to encourage innovation and safe UAS integration; those comments are now being reviewed.

In the interim, to further advance use of the test sites, in 2014, the FAA implemented a Designated Airworthiness Representatives program that permits test site designees to issue experimental certificates for unmanned aircraft for research and development, crew training, and market surveys. Test site designees must complete FAA training, available online or in person, to be authorized to work within this new program. This new delegation authority will improve access to the test sites by UAS manufacturers, as well as help decrease the workload on the FAA to process UAS experimental certificates.

In April 2008, even before the 2012 Act, the FAA chartered the small UAS Aviation Rulemaking Committee (ARC). It included members from a wide spectrum across the aviation community, to provide recommendations on how small UAS could be safely integrated into the NAS. In April 2009, the committee provided recommendations and the FAA began working on a rulemaking that encompassed the widest possible range of small UAS operations. The

approach utilized a regulatory structure similar to the one used for manned aircraft: small UAS operations that pose a low risk to people, property, and other aircraft would be subject to less stringent regulation, while those posing a greater risk would be subject to more stringent regulation to mitigate the greater risk. Developing this broadly-scoped approach to the rulemaking effort required time to strike the right balance between mitigating safety risks, while also allowing for changing technology and innovation.

On February 15, 2015, the Department and the FAA issued the Small UAS NPRM that would allow small UAS to operate for commercial and other non-recreational purposes without first obtaining an airworthiness certificate, a section 333 exemption or a COA. The proposed rule would allow unmanned aircraft weighing up to 55 pounds to operate if the operations take place under a set of parameters to maintain safety including operating at speeds below 100 mph and below 500 feet in altitude. It would allow operations during daylight hours and would require the operator to be able to see the unmanned aircraft at all times. Rather than requiring a private pilot certificate, operators would obtain an unmanned aircraft operator's certificate from the FAA by passing a written proficiency test. Before each flight, operators would conduct a preflight inspection, just as pilots do with manned aircraft today. The proposal does not permit flight over persons not directly involved in the operation unless they are under a covered structure, or operating under the proposed microUAS option. Also, without permission from air traffic control, unmanned flights would be restricted from operating in certain busy airspace or in airspace otherwise restricted to most or all aviation users. The proposal would offer a flexible framework for the safe use of small unmanned aircraft, while accommodating future innovation in the industry. The FAA intends to establish a risk-based approach to this rule and to lay a strong foundation that will facilitate safe integration.

The public comment period on the proposed small UAS rule closed on April 24, 2015. Issuing a small UAS final rule is one of the FAA's and the Department of Transportation's highest priorities. As proposed, the United States would have one of the most flexible UAS regulatory frameworks in the world.

In addition to the efforts described above, the Administrator recently announced the Pathfinder Program to study UAS operations in circumstances beyond those currently being approved. The FAA is partnering with three leading U.S. companies that have committed extensive resources to perform research that will help us determine if and how we can safely expand unmanned aircraft operations.. BNSF Railroad will explore the challenges of using these vehicles to inspect rail infrastructure beyond VLOS in isolated areas. CNN will examine how VLOS operations might be used for newsgathering in urban areas. Precision Hawk, a UAS manufacturer, will survey crops in rural areas using UAS flying outside of the pilot's direct vision. All of this information will help us determine how UAS are ultimately integrated into the NAS.

The FAA also continues to use all available information from its partners as well as its own research and development to identify challenges, validate advanced mitigation strategies, and explore opportunities to proceed in integrating UAS into the NAS.

On May 8, consistent with the direction in the agency's FY 2014 appropriation, the FAA announced Mississippi State University as the agency's new Center of Excellence (COE) for UAS. The COE will focus on research, education, and training in areas critical to safe and successful integration of UAS into the NAS. In addition to Mississippi State, team members include 12 other universities across the country. This will serve as another resource for

identifying solutions for existing and anticipated UAS-related issues. We intend to forge a union of public sector, private sector, and academic institutions to create a world-class consortium.

UAS have become increasingly available and affordable to the average consumer, many of whom are not trained aviators. Manned aircraft operators have reported close calls with UAS flying in the airspace. The FAA is taking a proactive approach to educate the public on the safe and responsible use of UAS. The FAA provided model aircraft enthusiasts guidance on the "do's and don'ts" of safe model aircraft operations. Last year, we partnered with members of industry and the modeling community to initiate the "Know Before You Fly" outreach campaign that provides UAS operators with the information they need to fly safely and responsibly. The FAA's No Drone Zone initiative, designed to raise public awareness of the FAA Notice to Airmen prohibiting unauthorized aircraft -- including UAS -- from flying over or near NFL regular- and post-season football games is a success. The No Drone Zone video posted on YouTube prior to the 2015 Super Bowl has received over 57,000 hits. Most important, we received no reports of unauthorized activity in the restricted airspace around the University of Phoenix Stadium during the game.

Recognizing that local law enforcement is often in the best position to respond quickly, the FAA issued guidance for these first responders to deter, detect, investigate, and report unauthorized or unsafe UAS operations. While our first preference is to educate UAS operators about statutory and regulatory compliance, we will use administrative and legal enforcement action to gain compliance when appropriate.

We are already looking beyond the small UAS rulemaking at what comes next in terms of the types of operations expected, and what technologies we may need to certify. The FAA has

consulted with the UAS ARC to determine the next areas of focus so we can enable those UAS operations with the highest net societal benefits. These recommendations are being assessed and will result in additional focus areas that will become the centerpiece for FAA's strategic plans for UAS integration.

As the aerospace industry and aviation system grow more complex, we must ensure that our resources are directed to the areas with the highest safety risk. We will need to expand collaborative, data-driven processes with the UAS industry to improve safety and streamline process in areas such as certification. We must meet challenges and take advantage of opportunities.

To reach these objectives, a new advisory circular is being developed to inform the UAS industry how to use a risk based decision-making process to establish certification criteria. This advisory circular is essential for enabling the certification of larger UAS for operation in the NAS.

The safe integration of UAS into the NAS will be facilitated by new technologies being deployed as part of the Next Generation Air Transportation System (NextGen). NAS Voice System (NVS), Data Communications (Data Comm), and System Wide Information Management (SWIM) will provide more information, flexibility, situational awareness and a greater ability to communicate with NAS users.

The United States has the safest aviation system in the world. Our goal is to integrate this new and important technology while maintaining safety as our highest priority. We are committed to ensuring that the United States continues to lead the world in the development and

implementation of aviation technology for safety. We look forward to continuing to work with Congress as we integrate UAS into the NAS.

This concludes my statement. I will be happy to answer your questions.

Federal Aviation Administration

Michael G. Whitaker
Deputy Administrator

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Michael Whitaker was appointed by President Obama as Deputy Administrator of the Federal Aviation Administration in June 2013. He is responsible for helping to ensure the safe and efficient operation of the largest aerospace system in the world – with over 50,000 operations daily – as well as regulating the safety of equipment and operators of the U.S. aviation industry. Whitaker also serves as the Chief NextGen Officer and is responsible for the development and implementation of FAA's NextGen modernization of the air traffic control system.

Prior to joining the FAA, Whitaker spent 20 years in the aviation industry, first with TWA in New York and Washington, where he served as Assistant General Counsel, then for 15 years with United Airlines, where he rose to Senior Vice President responsible for Alliances, International and Regulatory Affairs. At United, Whitaker was responsible for the significant expansion of the airline's international route and alliance network, and served on the management board of Star Alliance. Whitaker left United to become the Group Chief Executive Officer of InterGlobe Enterprises, the holding company that founded, owns and operates India's largest airline, IndiGo, among other travel-related businesses.

In 2014, Whitaker obtained his private pilot certificate as part of his commitment to fully understanding aviation technology and the challenges of general aviation. He is continuing his training toward an instrument rating.

Whitaker holds bachelor degrees in Political Science and French from the University of Louisville, and graduated cum laude from Georgetown University Law Center.

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