

**SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION:
QUESTIONS FOR THE RECORD**

**HEARING ON
UNMANNED AIRCRAFT SYSTEMS: KEY CONSIDERATIONS REGARDING SAFETY, INNOVATION,
ECONOMIC IMPACT, AND PRIVACY
TUESDAY, MARCH 24, 2015**

Questions for Mr. Paul Misener, Vice President of Global Public Policy, Amazon, Inc.

From Chairman Thune

- 1. What can Congress do now to help the FAA and other stakeholders facilitate the integration of UAS in a safe and secure manner?**

Answer. Congress has already given the FAA the authority to regulate UAS; however, the FAA needs impetus to act, especially on permitting commercial operations of highly-automated UAS beyond line of sight. Therefore, Congress should provide oversight. There is also an opportunity in the next FAA reauthorization act to direct the FAA to move more quickly to permit UAS operations in a truly performance-based manner.

From Senator Wicker

- 1. Unmanned Aerial System (UAS) Center of Excellence. Will the UAS Center of Excellence serve a valuable role addressing issues related to integration that will be useful to Amazon as you consider options for potential applications?**

Answer. Amazon supports the UAS center of excellence program and we look forward to actively participating with the academic consortium that is ultimately awarded the center. There are numerous research projects the FAA could fund through the center of excellence that could benefit the UAS industry, such as air traffic management for small UAS at low altitudes, and safety equipage requirements.

- 2. You've testified that the FAA is behind other countries, do you think the FAA can catch up?**

Answer. Although the United States is catching up in permitting current commercial UAS testing, the United States remains behind in planning for future commercial UAS operations, in particular for highly automated commercial UAS that fly beyond line of sight. The FAA should also elevate their level of intensity and participation in multinational organizations, such as the Joint Authorities for Rulemaking on Unmanned Systems (JARUS) and ICAO. International harmonization of rules is strongly desirable, and domestic balkanization by states and localities is not. Harmonized UAS rules, perhaps developed through JARUS or ICAO, should be a top FAA priority internationally. And within the United States, uniform federal rules should apply.

3. What can Congress do to ensure the U.S. doesn't fall further behind?

Answer. Congress should continue to provide close oversight of the FAA's activities, as should the GAO and DOT Inspector General. Although we are encouraged by the FAA's general preference to adopt a performance-based approach to regulating small UAS operations, we would like Congress, possibly in the FAA reauthorization act, to ensure the FAA truly embraces performance-based permissions, which will enable small UAS innovation to flourish. Congress can also provide the impetus to move the FAA more quickly towards commercial operations.

The FAA needs a comprehensive UAS plan on how it will collect, analyze, and use safety data. What data do they need, how do they want to collect it, where will it go, who will analyze it, and what will be done with it? Congress should also ensure that UAS research being conducted by others is considered and utilized by the FAA. For example, NASA has an unmanned traffic management initiative for small UAS flying at low altitudes, which could help the FAA safely allow highly automated UAS flying beyond line of sight.

4. What would you like to see in the next FAA Modernization and Reform Act?

Answer. We would like to see the FAA take a true performance-based approach to permitting UAS. Overly prescriptive restrictions are likely to have the unintended effect of stifling innovation and, over time, will fail to offer any corresponding safety benefit as small UAS technology evolves. By contrast, genuine performance-based permissions would facilitate the development, testing, and introduction of UAS technologies, including Prime Air, as soon as safely possible.

5. The FAA has an industry advisory group looking at UASs, is that group effective? What else could be done?

Answer. Although the FAA has asked a subcommittee of one of its aviation rulemaking committees (ARC) to examine beyond visual line of sight operations, the group (which Amazon sits on) has only met twice since its inception over a year ago. This low level of government attention and slow pace are inadequate, especially compared to the regulatory efforts in other countries.

We would like the FAA to establish a new Small UAS ARC to address the issues that will likely not be resolved in the proposed rule for small UAS. This is not to suggest that regulators here or abroad can quickly adopt comprehensive regulations for UAS operations beyond visual line of sight. That may take some time. But regulators should start developing a performance-based regulatory framework for future commercial UAS operations now.