

**Senate Subcommittee on Aviation Operations, Safety, and Security
of the
Senate Committee on Commerce, Science, and Transportation**

**Keeping Pace with Innovation:
Update on the Safe Integration of Unmanned Aircraft Systems into the Airspace**

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Statement of Helicopter Association International

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Chairman Blunt, Ranking Member Cantwell, and Members of the Committee, I want to thank you for holding this hearing on the critical issue of integration of unmanned aircraft systems (UAS) into the National Airspace System (NAS). I also want to express my sincere appreciation for the opportunity to provide testimony today.

I have been involved in aviation for more than 50 years, both helicopter and fixed-wing, military and civilian. During my entire career, I have not experienced a more exciting watershed moment than this one: the integration of unmanned operations and technology into the NAS. The potential benefits are only limited by our imagination. But along with such excitement and optimism, we must also take on the responsibility of making this integration safe, which requires all stakeholders to work together to ensure success.

As a representative of Helicopter Association International (HAI), I currently serve as a member of the FAA Drone Advisory Committee and the FAA Airspace Integration Aviation Rulemaking Committee. I have previously served as co-chair of the FAA UAS Identification and Tracking Aviation Rulemaking Committee and a member of the FAA UAS Registration Aviation Rulemaking Committee.

HAI's focus has been — and remains — on creating a culture in our industry that makes "Safety the First Priority." Our vision is to have "Zero Accidents." Over my many years in the industry, I

have seen tremendous growth and change, and today's focus on and commitment to safety is the highest I have ever seen in the helicopter community.

HAI's 4,100 members safely and professionally operate approximately 5,500 helicopters, flying an estimated 3 million flight hours a year. Our member companies and individuals span the industry, from manned and unmanned operators, to pilots, mechanics, manufacturers, and suppliers of goods and services.

Today's topic of UAS integration is about introducing a new category of aircraft safely into the NAS. From the beginning, HAI has been fully engaged in promoting this.

We have been early supporters of UAS technology and see it as a new business opportunity for the helicopter industry. Our members have been and will remain heavily engaged in unmanned operations in the coming years. Many have already established UAS business lines within their organizations.

This integration is occurring as we speak, but the concept of integration is not new. We've been integrating numerous aircraft categories into the airspace since aviation began. At one point, jets were new. Helicopters were new. Yet these aircraft were safely integrated into the NAS. We do not need to reinvent the wheel.

Today I want to touch on five important topics relating to the safe integration of UAS:

- The importance of the FAA preemption authority
- Ensuring safe access to the NAS for all aircraft
- The criticality of ensuring the safety of operations that occur beyond the visual line of sight of the pilot or operator
- The necessity of establishing training and certification standards for UAS operations
- The need for a nimble certification system for UAS.

FAA Preemption Authority

One important element of safety in the NAS comes from standardization of aviation regulations — and therefore operational processes and procedures — through federal preemption of aviation regulation, designating the FAA as the sole regulatory authority over US aviation. This clearly defined FAA authority has created an operating environment for US aviation that provides a system of safety for all operators of all categories of aircraft.

Our industry's first and foremost concern is for safety, which is as it should be. The principle of federal airspace preemption allows for one national regulatory authority, staffed by professional subject matter experts, to oversee the NAS with a common set of rules and laws understood by all operators, either manned or unmanned.

FAA airspace preemption ensures that all operators know the rules of the road — because there is one regulatory authority that oversees all of US aviation. Manufacturers build to FAA regulations, operators train to FAA regulations, and companies structure their operating procedures based on this common set of regulations. This long-established structure is an integral component of aviation safety, efficiency, and economic viability.

Safety at all levels is enhanced by standardization of rules and procedures, a stable knowledge base, and clearly defined lines of authority. Degrading and fracturing FAA airspace preemption to allow other entities to introduce regulations for either manned or unmanned aircraft creates an uncertain operating environment with reduced safety margins.

Introducing multiple variables of potential operational behavior just because you have crossed imaginary political boundaries adds risk to the operator and the public. At worst, these multiple variables may produce conflicting procedures or incentives, leading to a significant breach of safety. A routine aerial powerline inspection mission might take an aircraft through dozens of local municipalities during the mission. If each municipality were to have singular authority over aviation activities within its boundaries, the result could be a regulatory environment that is uncertain, in conflict, and counter to safety initiatives.

A successful integration strategy must be inclusive and provide a place at the table for all appropriate stakeholders, including local and state municipalities. However, ultimate regulatory authority and oversight must remain with the FAA.

FAA regulations and governance need to apply to all categories of aircraft operating in the NAS. However, in Section 336 of the FAA Modernization and Reform Act of 2012, Congress put in place restrictions that limited the FAA's ability to fully regulate the more than 1 million recreational and private-use UAS operators. Over the next five years, the FAA predicts the number of hobbyist drones will more than double to 2.4 million units.

For the safe integration of UAS into the NAS, the FAA must be able to regulate all aircraft in the NAS. HAI advocates that Congress approve legislation relating to Section 336 that gives the FAA full and singular regulatory authority over all unmanned operations.

Airspace Access

Some believe the easiest and quickest way to integrate UAS into the NAS is by excluding manned aircraft from certain segments of existing airspace. HAI believes that describes segregation, not integration. The integration of aircraft, not segregation of airspace, is the correct path forward.

Today all types of aircraft safely traverse the skies, from the humble Piper Cub to the most advanced airliner or military fighter. The NAS is a national resource and one that should be open to all who operate in compliance with FAA regulations. Current airspace users should never be excluded from airspace that they currently have access to. Segregation of the airspace with associated restrictions and prohibitions being placed discriminatorily on certain aircraft categories runs counter to our safety priorities and is an initiative HAI and its members do not support.

The UAS is simply the newest entrant on a list of many into the NAS. Older, established categories of aircraft should not be required to surrender their airspace access to accommodate this new technology. Instead, all aircraft and operators must work together to promote the safety of the NAS and to ensure that all airspace is safely accessible to all aircraft.

Safety is paramount, especially when considering airspace access. We have concerns when we hear about measuring risk over congested areas while considering noncongested areas as low risk. Our members' flight profiles and the missions they fly place them all over the nation in varied environments at various altitudes. From corporate helicopters flying out of high-density urban metroplexes to remote heli-logging operations, utility repair work, or firefighting missions, our helicopters are performing operations in a variety of situations and locations.

Just because the airspace is not defined as congested does not mean that there won't be manned aircraft operating in that section of the NAS. Safety requires that we all understand that risks aren't confined to just congested areas.

Beyond-Visual-Line-of-Sight Operations

The next step in advancing UAS operational capabilities and truly breaking open their commercial potential is the ability to safely operate UAS beyond visual line of sight. From our perspective, beyond-visual line-sight operations for UAS will only be safe once effective and certificated "see, sense, and avoid" technology is fielded. UAS must be able to avoid other aircraft, both manned and unmanned, while facilitating the ability of those aircraft to see, sense, and avoid the UAS. We already have experienced incidents where drones have collided with helicopters or have created a near-miss situation.

It is generally acknowledged that the technology for true "see, sense, and avoid" capability is not yet ready to deploy. Our members also want the ability to operate their UAS beyond visual line of sight, but the technology is simply not ready to provide the desired level of safety for conducting these types of operations. Developing mature technology that can withstand the FAA certification process needs to be prioritized so we can achieve safe beyond-visual-line-of sight operations — and then we will truly reap the benefits of a mature UAS industry.

As co-chair of the FAA UAS Identification and Tracking Aviation Rulemaking Committee, I have worked extensively on the need for drones to be identified and tracked in real time. This relates to both security concerns as well as the safe and efficient use of the NAS. All aircraft, whether manned or unmanned, operating in the NAS should have similar protocols of identification and

surveillance as appropriate to address the mission involved, aircraft capabilities, and perceived security threat. As part of this effort, consideration should be given to the right to privacy for the pilot/operators, using a need-to-know philosophy that balances individual rights and our national interests.

Training and Certification Associated with Unmanned Aircraft Operations

Operating any aircraft (manned or unmanned) should be considered a privilege, not a right. With that privilege comes a degree of responsibility and accountability to ensure safe operation. As such, effective training and certification programs for those associated with aircraft operations is a must.

Aviation training and certification requirements are necessary for a safe, efficient, standardized, and economically viable aviation operating environment. Appropriate training and certification protocols should be applied to UAS integration using the existing manned aircraft common-sense approach that considers the mission, aircraft capabilities, and potential security threat. HAI advocates for training that delivers a basic level of understanding for anyone operating an aircraft in the NAS. How can we expect anyone to comply with regulations that they have never been trained in?

Aircraft Certification

Because of the close integration of aircraft manufacturing standards with aircraft safety, the certification of any aircraft is a critical issue. UAS are becoming more complex and capable by the day. The FAA must have an effective yet flexible certification system that not only ensures safety of flight but also enables the swift recognition and adoption of new technologies while facilitating a user-friendly process that is economically viable.

HAI supports a certification program for the UAS category of aircraft. This will provide for standardized manufacturing processes and a common level of quality. This is an important issue when considering the possible effect of UAS operations on persons and property.

We all acknowledge that UAS technology is constantly improving and changing at breathtaking speeds. The FAA needs to have a certification process that can efficiently respond to the fast-paced changes in the industry. A nimble regulatory approach is essential so that industry is not held up waiting for government oversight to catch up to new technologies. A flexible certification system will ensure that safety is preserved while allowing manufacturers to certify and deploy their latest technologies to the field.

Conclusion

In closing, I would note my belief that when people of like minds and shared vision come together and work toward a common goal for the greater good, they can achieve anything. I am confident that we will find a way to work through the issues that I have outlined and that UAS will join manned aircraft in our airspace, safely, efficiently, and effectively, to the advantage of us all.

I thank the Committee again for the opportunity to provide the perspective of the helicopter industry and look forward to continuing our work together on these important issues. I welcome any questions.