

STATEMENT OF
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ASSOCIATE ADMINISTRATOR FOR COMMERCIAL SPACE TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
BEFORE THE
UNITED STATES HOUSE OF REPRESENTATIVES
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SUBCOMMITTEE ON AVIATION
ON
COMMERCIAL SPACE REGULATION
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Chair Larsen, Chair DeFazio, Ranking Member Graves, Ranking Member Graves, and Members of the Committee, thank you for the opportunity to meet with you today to discuss the topic of commercial space regulation. Commercial space activity is in the midst of a significant surge. The growth of the industry presents new challenges and opportunities as the technology evolves, and the number of industry participants expands. The FAA is committed to keeping pace with the growth of commercial space transportation, while prioritizing safety and ensuring access for all users of the National Airspace System (NAS).

Commercial Space Overview

The FAA, through the Office of Commercial Space Transportation (AST), licenses and permits the launch and reentry of commercial space vehicles consistent with public health and safety, safety of property, and the national security and foreign policy interests of the United States. The mission AST carries out includes the responsibility to encourage, facilitate, and promote U.S. commercial space transportation. These statutory objectives provide a framework that has resulted in an impressive safety record for a rapidly growing industry. The FAA has licensed or permitted over 450 launches and reentries, none of which has led to any fatalities, serious injuries, or significant property damage to members of the public.

The commercial space industry in the United States is dynamic, growing, and evolving. To illustrate recent growth, during each of the fiscal years (FY) 2018 through 2020, the FAA licensed an average of over 30 launches/reentries of commercial space vehicles. For FY 2021, we have already licensed 48 launches/reentries and expect significant growth in commercial launch activity beyond what we experienced over the last several years. Or, put another way, a decade ago the FAA licensed just a single launch in 2011. Five years ago, in 2016, the FAA licensed 11 launches, or about one per month. This calendar year, the FAA is averaging more than one licensed launch per week. As the industry continues to expand, the FAA has intensified its efforts to fulfill its commercial space mission, maintaining the highest level of safety without stifling industry growth.

A Streamlined Commercial Space Regulatory Framework

In 2018, the FAA began its work to streamline launch and reentry regulations to create an environment that promotes economic growth, minimizes uncertainty, protects safety, security, and foreign policy interests, and facilitates American leadership in space commerce. At that time, the existing commercial space regulatory framework was based largely on Federal launch standards that were developed in the 1990s or earlier, and were often overly prescriptive and a hindrance to innovation. Further, the rules were neither streamlined, nor consolidated. That regulatory structure may have satisfied the commercial space needs then, but the industry has changed substantially and continues to evolve. After two and a half years of focused work, the FAA published a final rule on December 10, 2020, that consolidated, updated, and streamlined all launch and reentry regulations into a single performance-based part—14 CFR part 450—to better fit today's fast-evolving commercial space transportation industry.¹ Part 450 includes

¹ <https://www.federalregister.gov/documents/2020/12/10/2020-22042/streamlined-launch-and-reentry-license-requirements>

regulations applicable to all launch and reentry vehicles, whether they have reusable components or not—a change from the prior framework. The updated regulations align with the goals of creating an environment that does not hinder industry innovation and importantly, enhances safety objectives without prescribing specific solutions. The commercial space industry provided extensive input during the public comment period for part 450, and we are pleased that initial reactions to the rule have been consistently positive. Additionally, after the rule was released, the FAA held a 3-day workshop and offered one-on-one meetings with companies to familiarize them with the final rule. Each operator who took advantage of these meetings conveyed that they were pleased with the final rule and appreciated our outreach efforts.

While the launch and reentry regulations have been published for several months and became effective on March 21, 2021, our engagement with industry on the requirements of the rules continues. AST has issued some advisory circulars to provide additional guidance on how to meet the requirements of part 450, and is developing more. We continue to engage with operators on specific aspects of part 450 compliance during pre-application consultations. Many of the advisory circulars that we anticipate issuing will provide detailed guidance for the industry on recommended safety procedures and practices for minimizing hazards. We expect that there will be launches licensed under part 450 in the near future.

Other Regulatory Considerations

We are constantly analyzing the regulatory needs of the industry for both public safety reasons and to ensure that the commercial space regulatory framework is performance-based and does not inhibit the health and success of the industry. In support of that effort, the FAA is revising the regulations applicable to orbital debris mitigation for launch and reentry operations. As part of this work, we are evaluating appropriate national and international standards for

orbital debris mitigation including evaluating the safety risks of uncontrolled reentries of space objects. These evaluations will include considerations of the risks to both commercial aviation and people on the ground.

Additionally, the Commercial Space Transportation Advisory Committee (COMSTAC) has recommended that part 440—Financial Responsibility—be reviewed and considered for revision. As part of our continuous review of the sufficiency of our commercial space regulations, we anticipate that a comprehensive analysis of this part would ensure that the right regulations with the right scope are in effect at the right time. Such a review would help to ensure that the public has the appropriate protections and that industry has clarity and flexibility to achieve the regulatory performance objectives without unnecessary burdens.

Part of AST's responsibility is also to monitor commercial space transportation licensees to ensure they adhere to the conditions of their licenses and comply with the applicable regulatory and statutory requirements. In this regard, the FAA has broad authority to suspend or revoke a license, and impose civil penalties if necessary. The FAA takes our oversight responsibilities seriously to ensure licensees are in full compliance.

Office of Spaceports

Keeping up with an industry that is evolving rapidly is a challenge. The pace at which the commercial space industry continues to change has resulted in an increase in both the complexity and the volume of the workload for AST. Some of that complexity has required us to make structural changes to better execute our mission. As this Committee knows, the FAA Reauthorization Act of 2018 required us to identify within AST a centralized policy office to support launch and reentry sites and to generally support improvement of spaceports. In response to that mandate, the Office of Spaceports was officially established in March 2020, and

is functioning today. AST is committed to removing barriers to competitiveness for spaceports and to helping ensure that the United States leads the world in space infrastructure. The operation of the first non-Federal spaceport was licensed by the FAA in 1994, and there are currently 12 non-Federal spaceports across the United States licensed for launch or reentry operations. A spaceport license is valid for 5 years and is renewable. While the FAA considers many factors when reviewing an application for a spaceport license, two of the most important are public safety and environmental impact. The FAA carries out a thorough and rigorous application review process to make sure we issue a license consistent with our mandate to protect public health and safety, safety of property, and the foreign policy and national security interests of the United States.

We recognize that spaceports have significant potential to become important economic hubs. For example, of the 47 FAA licensed launches this fiscal year, six have occurred at FAA licensed spaceports. As a result, the Office of Spaceports has taken action to share information on the capabilities of U.S. spaceports broadly. For example, in October 2020, we published a web-based spaceport directory outlining U.S. spaceport infrastructure and capabilities and the services provided by FAA licensed spaceports, Federal launch ranges, and private commercial spaceports. This directory documents the capabilities of our nation's network of spaceports for the commercial space transportation industry, as well as U.S. government space users, and may help to serve as a tool for the Office of Spaceports to identify future needs.

The Office of Spaceports is putting spaceports on the map. Spaceports or "Space Launch Activity Areas" are denoted as rocket symbols on aeronautical sectional charts increasing aviator awareness of launch or reentry activities in their area. The Office of Spaceports is also in the process of publishing additional instructional information about Space Launch Activity Areas in

the FAA Airman's Information Manual that will encourage aviators to check notices to airmen in these areas for additional launch or reentry specific information. These efforts help to integrate space and aviation activities and increase overall safety of the NAS.

The Office of Spaceports also facilitates FAA review and approval of space-related activities at FAA licensed spaceports to enable a stronger commercial space transportation industry. These activities include rocket engine testing, flight corridor development for supersonic, hypersonic, and suborbital space activities, and beta testing of new space launch platforms for future use by the commercial space transportation industry. Further, the Office of Spaceports works to facilitate commercial support for launches from Federal launch locations. Finally, the Office of Spaceports is evaluating whether the FAA's spaceport regulations (part 420 and 433) for launch and reentry sites should also be updated.

Integration of Commercial Space into the NAS

Of the many challenges AST faces, integration of commercial space into the NAS is a top priority. Commercial space operations are currently treated as "special cases" in which air traffic controllers block off large sections of airspace for extended periods of time for a single launch. Although this process is currently manageable, it is unsustainable in the long run given the expected growth in commercial space launches. Moreover, the current process, while effective, is resource intensive and inefficient. Launch teams voluntarily provide real-time information concerning the status of a launch or reentry vehicle either over the telephone or over an internet connection. Under these limitations, launch teams can only support one mission at a time.

In AST, we are actively working on solutions to address how commercial space will grow within the NAS alongside commercial and general aviation. Our vision of spaceport operations is that they should be able to operate either co-located with airports or in close

proximity to them. To this end, we are working on multiple initiatives. We worked with the FAA's William J. Hughes Technical Center in Atlantic City, New Jersey to build the agency's first dedicated commercial space integration lab for developing and prototyping technologies that will be leveraged towards enhancing commercial space operation awareness to better manage the NAS. Additionally, AST continues its work with the FAA's Air Traffic Organization on the Space Data Integrator technology. This safety-based technology, which will automate the current manual processes, will enable the FAA to track a space mission's progress as it flies through the airspace. When deployed, this technology will enable the FAA to better manage the airspace that must be closed to other users and more quickly implement and release airspace restrictions as a mission progresses. At the FAA, we recognize that our role is not just limited to the safety of the airspace—but to ensure equal access to it as well. We are fully engaged in balancing the needs of all airspace users—including traditional manned aircraft, drones, commercial space transportation, and others.

Conclusion

In closing, the FAA is committed to effectively carrying out its responsibilities for public safety and the health of the commercial space transportation industry. We will continue to assess our entire regulatory framework in light of the industry's growth and look forward to working with Congress and industry to strike the appropriate balance. This concludes my testimony, and I will be glad to answer any questions from the Committee.