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Committee on Transportation and Infrastructure
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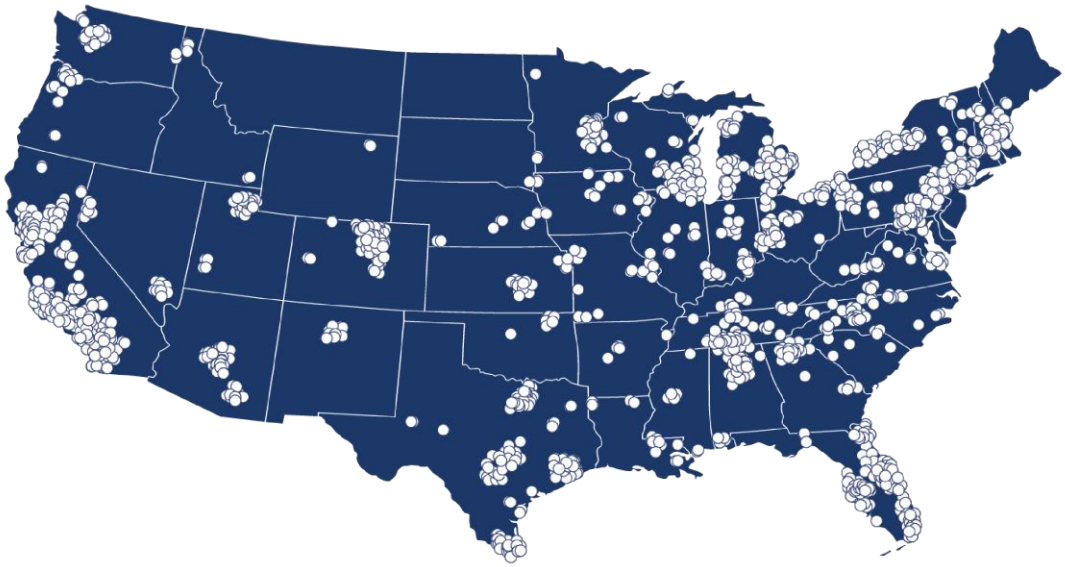
Introduction

Chairman Larsen, Ranking Member Graves, and Members of the Subcommittee -- thank you for this opportunity to speak on a matter of vital importance to our nation -- the Federal Aviation Administration's (FAA) role in promoting U.S. commercial space transportation, ensuring public safety, and protecting the national security and foreign policy interests of the United States. I am privileged to represent United Launch Alliance's (ULA) talented and dedicated team of women and men, who are at the forefront of our industry. As President and CEO of ULA, it is my responsibility to be laser-focused on providing reliable, affordable, and safe space transportation services.

To develop our launchers and deliver payloads to space, ULA maintains major assets across the United States. We staff employees at facilities in Denver and Pueblo, Colorado, Decatur, Alabama, and Harlingen, Texas where we conduct sophisticated launch vehicle engineering, testing, manufacturing, assembly, and integration. At Cape Canaveral Space Force Station in Florida and Vandenberg Space Force Base in California, we conduct payload integration and launch operations. I am extremely proud of ULA's dedicated workforce. Many of our employees are represented by the International Association of Machinists and Aerospace Workers and the United Automobile, Aerospace and Agricultural Implement Workers of America.

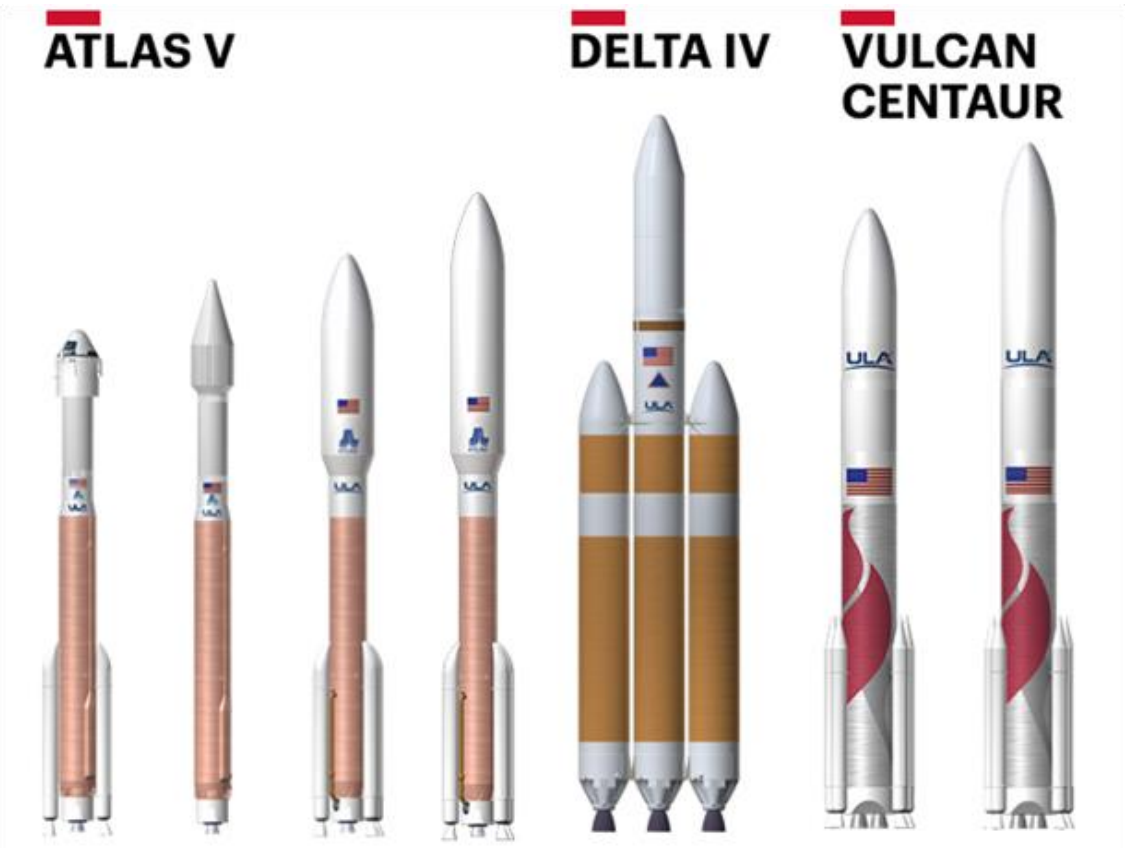
ULA also partners with thousands of suppliers across the country in nearly every state. By working with these suppliers – many of which are small businesses – ULA plays a critical role in assuring a highly productive and competitive U.S. space industrial base.

ULA'S SUPPLIERS ACROSS THE NATION



Mission Success

Having an unmatched record of 100 percent mission success across 144 launches for the Department of Defense, NASA, and commercial customers, ULA occupies a unique position in U.S. space transportation. Since its formation in 2006, ULA has launched satellites for GPS, communications, weather forecasting, Earth science, planetary exploration, missile warning, and intelligence, among other purposes that are critically important to our nation. Today, these missions launch on our Atlas V and Delta IV rockets, and soon we will debut the innovative Vulcan Centaur.



ULA remains the only launch provider capable of meeting all national security launch needs. For many years, the Department of Defense has entrusted ULA with delivering its most important national security payloads to space. The United States Space Force's recent selection of ULA as the nation's "best value" provider, chosen to launch 60 percent of all national security payloads from 2022-2027, reaffirms ULA's trusted position.

ULA's Atlas, Delta, and heritage rockets have enabled NASA science missions to travel to every planet in the Solar System, the Sun, and beyond. In 1962, when John Glenn became the first U.S. astronaut to orbit the Earth, he rode aboard an Atlas rocket. Today, ULA's rockets send cargo to the International Space Station as part of the Commercial Cargo program and will soon carry our American astronauts there aboard Starliner as part of the Commercial Crew program. It is worth noting that launches in support of Commercial Cargo and Commercial Crew are FAA licensed launches.

Every single successful U.S. mission to Mars has arrived safely thanks to a ride from ULA's Atlas, Delta, and heritage rockets. With the benefit of ULA's launch services, NASA's *Perseverance* and *Ingenuity* are achieving major technical breakthroughs and making exciting new discoveries on Mars. In doing so, NASA is inspiring America's youth to pursue science, technology, engineering, and math – collectively known as STEM – and demonstrating that the United States remains the global leader of space exploration, outpacing China's aggressive space program, which is a major component of the Chinese Communist Party's ambition to supplant

U.S. global leadership and replace democracy with authoritarianism as the global model for governance.

ULA has many commercial customers who rely on ULA to successfully place satellites in orbit. These commercial launches represent major investments and business opportunities that yield essential services and generate economic growth, as well as augment capabilities of our dedicated national security and civil space assets. Our upcoming launches will support numerous commercial customers serving various markets. ULA's upcoming first flight of Vulcan Centaur will carry the first American commercial vehicle to the lunar surface as part of NASA's Commercial Lunar Payload Services (CLPS) program. In addition to science payloads, the vehicle will carry the STEM projects of American and international students.

As Vulcan nears operation, ULA is beginning the transition from Atlas V and Delta IV. Vulcan incorporates important technical innovations – many tested on our existing vehicles to optimize development – which enables ULA to meet its goal of offering launches at a significantly lower cost, while maintaining maximum reliability, thereby expanding opportunities for the commercial development of space. More than thirty Vulcan launches are already on our launch manifest.

Commercial Space Launch Licensing

Though sometimes overlooked, the success of U.S. commercial space transportation has become integral to that of our civil and national security space programs. In a geopolitical environment characterized by a renewed competition for global power, the United States cannot afford to relinquish its leadership position in space. That leadership can only be maintained with an increasingly successful domestic space transportation industry. That fact underscores the

enormous importance of the FAA's licensing of launch, reentry, and spaceports, while protecting national security and public safety.

When conducting space launches for commercial customers, ULA seeks a license from the FAA's Office of Commercial Space Transportation (AST). The Atlas V and Delta IV rockets were both commercially developed in the late 1990s to rely on a burgeoning commercial market. In fact, at the time it was assumed U.S. government launches would make up a tiny minority of the launch manifest. Because of this, our launch operators are experts on the licensing process. When the FAA began work on a major update to the licensing process in 2018, ULA played an integral role in providing industry feedback on how to streamline existing rules in a way that would ignite the commercial launch industry while maintaining safety as the number one priority of the agency.

The future success of the U.S. commercial space transportation industry depends upon the efficiency and effectiveness of FAA licensing. I applaud the organization for rising to the challenge by finding ways to reduce regulatory burdens and their attendant costs, in addition to assigning the highest priority to safety and protecting national interests.

It is important to recognize that safety is as much in the interest of the commercial space transportation industry as it is in the interest of the general public. Any loss of life, damage to property, or environmental degradation caused by space launches, reentries, or spaceport activities could harm our entire industry by reducing public and political confidence, which would lead to increased restrictions and related costs. This, in turn, would have an adverse impact on commercial space and our overall national interest as space transportation becomes more constrained and expensive. I am happy to report that the ULA safety record remains impeccable.

The success of our industry can be clearly measured by the increase in licensed space operations. In 2011, there was only one licensed commercial space launch, while in 2020 that number grew to 39. Beyond evincing our industry's success, this measure emphasizes the need for regulators to adapt. The FAA responded boldly to the need for a constructive, forward-leaning approach to the escalating demand for launch and reentry licenses. The organization's streamlining of launch and reentry regulations is a landmark example of how the FAA has contributed to the advancement of U.S. commercial space transportation, while maintaining safety as paramount, and protecting our national security and foreign policy interests. This followed reorganizing FAA/AST along functional lines to increase accountability, retool internal processes for effectiveness and efficiency, and hire additional staff with the right skills to meet future demands.

In a world marked by economic competition, changing climate, health emergencies, and international political, military, and intelligence challenges, the new FAA regulations (Part 450) enable our industry to adopt innovations that will catalyze growing contributions to the economy, environment, health, safety, and security of the United States. These Part 450 regulations include flexible, performance-based criteria in place of the formerly cumbersome, prescriptive requirements. ULA participated actively in the regulatory process and we are gratified that the

company's comments, along with those of other thoughtful stakeholders, were well received by the FAA.

In order to maintain the integrity of the licensing process, we need effective enforcement. It may not be obvious, but the FAA has never denied an operational launch license. If the FAA has a problem or concern with a ULA license, they promptly flag the issue, and we make sure the issue is resolved well in advance of launch. These regulations exist for a reason; space launch is not as easy as we make it look. Industry is naturally going to trend towards pushing the boundaries, so it is vital that Congress provides FAA the support it needs to conduct effective oversight and enforcement of the licensing process. Responsible operators will comply with FAA regulations and licenses. Those who do not should face enforcement and impactful consequences.

Integrating Spaceflight into the National Airspace System

The FAA has encouraged commercial space transportation and air transportation to work together in the interest of a safe and efficient National Airspace System (NAS). Despite grappling with the challenges posed by NAS' multiple uses, the progress already made is noteworthy.

With this kind of record at the FAA, it is incumbent upon the commercial space transportation industry not only to comply fully with regulations, orders, and guidance, but also to cooperate actively with the FAA and to accord its talented, dedicated, and hardworking women and men the respect and appreciation they so greatly deserve.

As we look forward to the not-so-distant future, the FAA's rising challenges are inevitable. Commercial launches and reentries will continue to increase in frequency and complexity, and numerous spaceports will be added, which will occupy an ever-widening expanse of the NAS. The emergence of commercial human spaceflight will entail new risks and opportunities, requiring the FAA's close attention. Likewise, the FAA will have to weigh carefully the environmental factors on land and in air, sea, and space, which attend the growth of commercial space transportation.

Protecting Earth Orbit – A Natural Resource

There has been much attention devoted, especially lately, to the sustainability of the orbital regime; and rightly so. The advent of vast constellations of satellites in Low Earth Orbit has brought new opportunities to daily life here on earth, but has raised concerns about the increased risks of collisions and consequent debris. This could threaten the safety of astronauts and space objects. Moreover, it could further complicate the transit of launch vehicles and payloads, the safe disposal of rocket stages, and even render the affected orbits unusable for decades. The physical density of certain mega-constellations, along with autonomous, unpredictable, and undisclosed repositioning of spacecraft, could make certain orbital altitudes too crowded for use by other spacecraft and limit the practical launch access to fly through these shells to adjacent orbits.

On the other side of the equation, the benefits of satellite constellations are evident, and there are promising technologies for on-orbit satellite servicing and active removal of dead spacecraft and other orbital debris. However, those capabilities may not be sufficient to adequately address the impending problems, at least not for the foreseeable future. As a launch provider, we have a vested interest in protecting the orbital regime so we can continue launching responsible customers to space. One way ULA remains proactive on this front is by safely disposing of our second stage rockets by placing them in a graveyard orbit or conducting a controlled reentry where most of the stage disintegrates over the remote, deep ocean.

In accordance with its statutory mandate, the FCC has strongly promoted the deployment of mega-constellations, with a focus on their benefits. The attention of other government organizations to the potentially negative impacts of mega-constellations is a welcome development, and I hope and expect that the FAA will lend its expertise. I would argue the FAA has a statutory role in this matter due to its charge to protect national security and national airspace users from reentering debris. We can't put national security satellites into orbit if we can't get there in one piece.

Foreign governments and multilateral organizations also have important roles to play. The United States does not have a monopoly on satellite constellations, and accordingly, the existing international rules of conduct for space activities must be revisited and new ones considered for this burgeoning area. I note that China plans to deploy 13,000 satellites in LEO and is providing robust funding and other government support to bring that about. Considering these circumstances, it is profoundly in the interest of the U.S. government to lead the way in confronting these issues with the invaluable work of the FAA.

Enabling Regulatory Success

When addressing the roles and responsibilities of the FAA, its relationship with commercial space transportation stakeholders, and the performance of its missions, it is important to recognize the outstanding contributions of the Commercial Space Transportation Advisory Committee – COMSTAC. ULA is represented on the Committee, so I take a special interest in its accomplishments and ongoing projects, from which the FAA, industry, and the public all benefit.

But, most important of all to the success of the FAA in regulating and promoting U.S. commercial space transportation is the foundational role of Congress. U.S. commercialization of space transportation has been possible only because Congress has remained committed to ensuring that our nation enjoys the countless, vitally important benefits enabled by this fast-growing industry, while maintaining safety as the highest priority and protecting our national security and foreign policy. The increased demand for licensing of launch, reentry, and spaceports must be matched by augmented administrative resources if commercial space transportation is to continue its rapid advance in the national interest. Accordingly, I, like others in the industry, strongly support the Fiscal Year 2022 budget request for increased funding for FAA/AST.

In closing, I wish to express my appreciation for your focus on the FAA and U.S. commercial space transportation. Your dedicated attention to this vitally important matter is indispensable to ensuring the continued support of Congress for the FAA and our industry. Again, thank you for inviting me to testify today. I look forward to answering your questions.