

**Testimony of  
Mr. Michael C. Gass  
Chief Executive Officer  
United Launch Alliance, LLC**

**Subcommittee on Science and Space  
Committee on Commerce, Science and Transportation  
United States Senate**

Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to appear today to discuss the Administration's plans for human spaceflight. My name is Michael Gass and I am the President and Chief Executive Officer of United Launch Alliance. The 3900 women and men of United Launch Alliance are honored to be able to support our customers' missions with the most reliable, best value launch services with our Atlas and Delta rockets. Our customers are the Department of Defense, the National Reconnaissance Office, NASA, and commercial satellite system providers.

Formed in December 2006, United Launch Alliance, LLC is a 50/50 joint venture of Lockheed Martin and The Boeing Company. The formation of ULA brought together the launch industry's most experienced and successful launch vehicle teams to support the United States Air Forces' Evolved Expendable Launch Vehicle program (EELV) with the Atlas V and Delta IV products. We joined together as one company, one team, to enable the business sustainability to deliver improved mission success with lower cost to our customers.

The Atlas and Delta expendable launch vehicles have supported America's presence in space for more than five decades, with over 1300 launches and an impressive record of mission success. These missions have carried a variety of payloads including national security, communications, navigation, weather, science, and commercial space that protect and improve life on Earth, as well as further our knowledge of the universe.

Members may recall that the first American to orbit the Earth, John Glenn, was lifted into orbit on an Atlas rocket. Since then, the launch vehicle has evolved through innovative improvements accomplished by generations of

engineers and technicians to today's EELV fleet. The rocket Glenn flew was used by both the Department of Defense and NASA for human spaceflight, a concept that was right then and is available again today.

Before I get to the central questions you asked, ULA, as a commercial launch service provider, would like to offer our support for the Administration's proposed plan. As I stated to the Augustine Commission, our nation must have the constancy of purpose to have a strong human and robotic science and exploration program. This program must transcend any one company or agency solution, and the implementation must be affordable, sustainable and flexible.

The Administration's plan makes long-overdue investments in research, technology and upgrades to our launch ranges that are essential to ensuring the United States remains the world's leader in space. One critical investment that will have benefits to all future national security, civil and commercial space missions is in space liquid propulsion technology. I urge members to support these important technology investments.

The plan also has the potential to foster and grow commercial space opportunities. I think it's important to note, given today's topic, that the consolidation to form ULA was done in part because the commercial market projected in the late 1990's did not materialize as was originally expected and the remaining market was insufficient to sustain two healthy launch service providers. Therefore, we believe the nation's human access to space should not be dependant on the success of a future adjacent commercial market.

Now let me address what ULA, as a proven launch service provider, can do to meet the demand for human-rated launch services under the Administration's proposed commercial crew program.

First, I'd like to say that ULA is ready, willing and able to support the human spaceflight program and help make it successful.

The EELV rockets provide the quickest and safest approach to closing the gap following the retirement of the Space Shuttle. ULA and our member companies have invested billions of dollars of private capital into these systems that can be leveraged for our nation's human access to space.

ULA believes there is a unique opportunity for NASA and the DOD to leverage the existing EELV systems towards meeting NASA's safety and reliability requirements for all missions at lower costs.

ULA also believes the system architecture of our EELVs is extensible for future exploration beyond low earth orbit by either leveraging the potential fuel depot technologies or by building heavy lift vehicles using the same modular concept that is inherent in our existing EELV fleet.

We will be working with multiple companies to provide launch services in support of their commercial crew services. We will apply our products and teams fairly in support of all these companies. By leveraging our investments and utilizing existing launch infrastructure we can support test flights within three years.

Use of EELV fosters a strong launch industrial base that enables efficient access to support numerous mission needs. In the past, our nation had specific launch programs that served niche payload markets and separate systems for NASA and DOD, each requiring separate infrastructure and industrial capabilities. This was inefficient and less reliable.

### Human-rating EELVs

Can EELVs be human-rated to support commercial crew?

The simple answer is absolutely.

How quickly could these rockets be ready for a human-rated flight?

The rocket will be ready before the crew vehicle—primarily because the rocket already exists and is flying.

Let me explain further. The Atlas and Delta EELVs were designed from the outset with the primary goal of being as safe and as reliable as we could possibly make them for our customers. EELVs are tasked with launching the most sophisticated, highest priority national security satellites. The value of these assets to decision-makers, the intelligence community and the warfighter far outweighs their replacement cost. They must get to orbit safely. As a result, all that can be done to ensure mission success is done. Any additional NASA human rating requirements that enhance the launch vehicles reliability would benefit our national security customer's missions and we would incorporate these changes in the entire fleet.

What does it take to human-rate EELVs?

ULA believes changes to the rocket are minimal. The basic rocket itself would remain the same and we would add an Emergency Detection System (EDS). The EDS is essentially an electronics box that monitors the health of the rocket as it is flying and provides the capability for the crew vehicle to trigger an abort, if needed. Crew safety must be treated as an integrated solution between the crew vehicle and an inherently safe launch vehicle, combined with a robust abort capability. ULA looks forward to the opportunity to work with NASA to validate our approach.

On the ground, pad modifications would need to be made, primarily to accommodate crew ingress and egress to the rocket. The cost and complexity of these facility changes are relatively modest. Depending on expected flight rate, dedicated human launch facilities will be considered.

In summary, ULA supports the human spaceflight program and stands ready to assist in making it successful. EELV based solutions provide a near term, reliable solution for flying humans to low earth orbit. Use of the EELV fleet promotes synergy with the national security space community, provides NASA with scalable options for heavy lift exploration needs and provides a foundation for U.S. space launch industrial base to improve its international competitiveness.

Thank you again for inviting me to testify. I look forward to your questions.