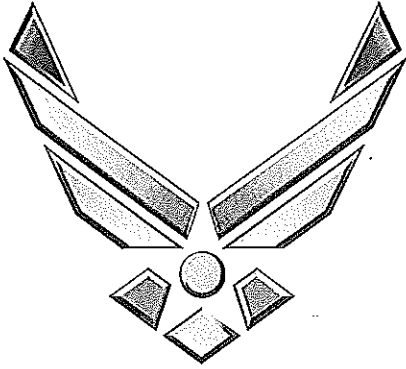


United States Air Force



Presentation

Before the Senate Committee on Armed Services and the Senate Committee on Commerce, Science, and Transportation

Joint Space Launch

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Introduction

The Air Force's space capabilities – and the Airmen who operate them – are foundational to our Nation's ability to deter aggression and effect global impact across the entire range of civil and military operations, from humanitarian and disaster relief through major combat. Our military satellites provide mission-critical global access, persistence and awareness for our national security and have become vital to the global community and world economy as well. Space assets have been a key element of warfighting for over 30 years, providing a unique vantage to observe activity around the globe, relay terrestrial communications, and provide precision position information.

The challenge before us, then, is to ensure space services continue to be available, at the times and places of our choosing, even in an increasingly challenging space domain. And the first step in this process is to assure our ability to provide safe, reliable and available access to space for national security payloads. We have established an unprecedented launch success record by placing an uncompromising premium on mission assurance. Not that many years ago, we took our collective eyes off mission assurance and paid dearly for it. The loss of even one national security payload—both in terms of financial loss and operational impact—would make our mission assurance costs look like very cheap insurance. Therefore, we will continue to place emphasis on tough mission assurance principles to do all that is humanly possible to guard against launch failure.

The Evolved Expendable Launch Vehicle Program

By 2010, the Evolved Expendable Launch Vehicle (EELV) program predicted significant cost growth. Mainly, this was due to the sharply rising price of launch vehicle propulsion systems due to excess industrial capacity and resulting infrastructure costs in the wake of the retirement of the Space Shuttle program. Another cost driver was the established practice of procuring launches individually, driving business uncertainty to the U.S. domestic launch industrial base, and particularly, the rocket propulsion industry. In response, working with the Secretary of Defense and Congress, the Air Force initiated a 36-core block buy with United Launch Alliance (ULA) – the single certified industry provider at the time – but also documented a plan to expand the program's provider base through the carefully managed introduction of competition. This approach reserves missions for future competition, while focusing on maintaining a full spectrum national security launch manifest.

The Air Force has intensified attention on the business aspects of the EELV program to control costs while maintaining a 100 percent mission success rate since 1999. This year's budget reduces the program by \$1.2 billion. Combined with prior-year Air Force reductions and savings for the National Reconnaissance Office, we have reduced the total program by \$4.4 billion from the baseline in the fiscal year (FY) 12 budget.

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Competitive New Entrant Environment

The commercial space launch industry has made substantial progress over the last year, including successful launches by Orbital Sciences and SpaceX. As a result, we are managing change in the EELV program from a single-provider environment to a multi-provider environment through a certification process. When industry entrants seek to compete for Department of Defense (DOD) launches, they understand and agree to a set of statutory and regulatory requirements that every DOD program contractor is required to fulfill to enter into competition. The certification process ensures all prospective industry entrants meet the program's baseline technical requirements, which include accommodation for existing payload designs, ability to launch to specific orbits, and desired launch dates (for projected missions). All requirements that are part of the certification process are validated through the DOD requirements process. This ensures Department oversight of processes and program costs, and helps to minimize mission risk.

Our launch acquisition strategy aims to take advantage of the competition made possible by capable new entrants, once certified according to the approved new entrant certification process. Planning space missions involves a significant investment in both financial and personnel resources over multiple years. The certification strategy, jointly developed by the Air Force, National Aeronautics and Space Administration (NASA), and the National Reconnaissance Office (NRO), ensures that once certified, new entrants to the market have earned Department confidence of meeting current and future mission needs. The phased introduction of competition through deliberate certification is the approach chosen to help lower launch costs while maintaining a laser-like focus on mission assurance. We are also striving to encourage a stable and reliable industrial base to ensure continued assured space access.

In Phase 1 of the current EELV program, the Air Force, alongside our NRO and Navy partners, agreed to acquire 36 cores from ULA over a period of 5 years (between FY13-17) [note: one core means one launch vehicle, with the exception of the Delta IV Heavy, which is three cores]. The contract provides a stable business base to our current provider, as well as the ability to conduct economic order quantities with their subcontractors. It is important to note that the scope of the 36-core buy was set by our assessment of which cores and missions we would *have* to buy from ULA. In executing the block buy, we reserved as many missions as possible for competition between certified providers.

While increases in satellite service-life and budget realities have reduced the previously planned number of missions viable for competition, Air Force efforts to foster a robust competitive environment have not flagged. It remains our intent to make as many launches as possible available for competition during Phase 1A and beyond.

Phase 2 introduces a wider variety of competition options, and reflects an environment in which every DOD launch is competed between certified launch providers. Air Force Space Command's Space and Missile Systems Center continues to refine this acquisition strategy while looking forward to Phase 3 in the 2023-2030 timeframe. Although the only certified launch provider today is ULA, the Air Force has committed considerable budget and manpower resources to facilitate new entrant certification. Through this process, we will continue to carefully and conservatively manage

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the introduction of competition to ensure that planned and future missions are delivered safely, successfully, and on schedule.

Foreign Engine Reliance and Mitigation

In addition to efforts to certify other vehicle families, the Air Force recently completed an RD-180 Availability Risk Mitigation Study at the request of the Secretary of Defense. This study found that an RD-180 production loss or interruption would have significant impact on our ability to reliably launch the current manifest of national security payloads on a schedule of our choosing. While the study does evaluate a number of near term (FY14-17) options to mitigate RD-180 supply disruption – including options to use the RD-180 inventory stockpile, adjust the currently planned manifest to use of alternate launch vehicles, increase alternative launch vehicle production rates, and/or even re-sequence or delay some missions – no option is risk-free, and certainly not cost-free. A prolonged interruption would result in increased risk for our national security space posture due to unavoidable delays. Options are limited in part to the current state of new entrants in the certification process; in other words, the lack of certified additional vehicles at this time. There is also risk and cost associated with the engineering and lead-time necessary to transfer existing Atlas V missions – those using the RD-180 – to the more expensive Delta IV launch vehicle as well. The current inventory of RD-180 engines is expected to last up to two years in the event of supply disruption, while sustaining the manifest.

While DOD and the Air Force continue to evaluate the range of potential mitigation measures, the Air Force has already begun work to ensure our near-term launch requirements continue with minimal disruption should RD-180 engine availability become an issue. We are developing both near- and far-term strategies to explore alternatives, and place at a premium the continued exploration of both competition and public-private partnerships to drive innovation, stimulate the industrial base, and reduce costs.

While the RD-180 has served us well, current uncertainty highlights the need to consider other options for assured access to space. If deemed a national priority, a sustained focus on rocket propulsion technology would allow the United States to operate within a broader trade space, helping mitigate disruptive events affecting external supply lines. A domestically produced new engine program would revitalize the liquid rocket propulsion industrial base, end reliance on a foreign supplier, and aid the competitive outlook for the entire domestic launch industry. Such an undertaking would be a multi-year effort, however, and would require significant Congressional support to maintain adequate funding in future years.

Conclusion

Air Force payloads provide foundational space capabilities to the Joint Warfighter and the Nation, who collectively rely on these systems across a range of civil and military operations. We are committed to sustaining the highest levels of mission assurance, and our ultimate objective is to safely and reliably launch national security payloads on a schedule determined by the needs of the national security space enterprise.

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We have an incredible track record of success, but to ensure we maintain this record, we will continue to treat each and every launch as if it is our first. We thank the Committees for their support and look forward to our continued partnership to provide resilient, capable, and affordable space capabilities for the Joint Force and the Nation.