United States Government Accountability Office

Testimony
Before the Committee on Appropriations, U.S. Senate, Subcommittee on Defense

For Release on Delivery
Expected at 10:00 a.m. EST
March 5, 2014

EVOLVED EXPENDABLE LAUNCH VEHICLE

Introducing Competition into National Security Space Launch Acquisitions

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GAO Highlights

Highlights of GAO-14-259T, a testimony before the Committee on Appropriations, U.S. Senate, Subcommittee on Defense

Why GAO Did This Study

DOD's Evolved Expendable Launch Vehicle (EELV) program is the primary provider of launch vehicles for U.S. military and intelligence satellites. DOD expects to spend about $9.5 billion over the next 5 years acquiring launch hardware and services through the program, during which time it will also be working to certify new launch providers. Certified launch providers may compete for up to 14 launches, likely beginning in fiscal year 2015. Until now, the United Launch Alliance (ULA) has been the sole provider of launch services through the EELV program. Because of the importance of the national security space launch enterprise, GAO has been asked to look at many aspects of the EELV program over the past 10 years.

This testimony discusses (1) changes in the EELV acquisition strategy since its inception, including DOD's December 2013 contract modification with ULA, and (2) the upcoming competition for up to 14 EELV-class launches and the implications to DOD, ULA, and potential launch providers of two possible DOD approaches to structuring competitive launch proposals. The testimony is based on the body of work GAO has performed on the EELV program from June 2004 to March 2014.

What GAO Recommends

GAO is not making recommendations in this statement but has made recommendations in its previous work to strengthen EELV acquisitions, such as improving DOD oversight and addressing knowledge gaps. DOD generally concurred and took action to address GAO's recommendations.

View GAO-14-259T. For more information, contact Cristina Chaplain at (202) 512-4841 or chaplainc@gao.gov.

What GAO Found

The Department of Defense (DOD) began the Evolved Expendable Launch Vehicle (EELV) program in 1995 to provide a new generation of launch vehicles to ensure affordable access to space for government satellites. In November 1997, based on commercial forecasts at that time, the Office of the Secretary of Defense (OSD) approved maintaining competition between two contractors, and in 1998, DOD competitively awarded "other transaction agreements" to Boeing and Lockheed Martin for the development and the associated launch infrastructure to meet EELV program requirements. In 2005, DOD revised the EELV acquisition strategy to reflect the collapse of the commercial launch market and the ensuing erosion of the industrial base which DOD believed threatened its assured access to space. In acknowledging the government's role as the primary EELV customer, the new strategy maintained assured access to space by funding two product lines of launch vehicles. Shortly afterwards, Boeing and Lockheed Martin announced plans to consolidate their launch operations into a joint venture—United Launch Alliance (ULA). According to DOD, the EELV program was focused on mission success in the ensuing years, until 2010, when DOD officials predicted EELV program costs would increase at an unsustainable rate. In light of new EELV program costs estimates, DOD recognized the need to reorganize the way it acquired launch services. The 2011 EELV acquisition strategy advocated a steady launch vehicle production rate that would yield both economic benefits to the government through larger lot buys of vehicles, and a predictable production tempo over time to help stabilize the launch industrial base. It also introduced the government's intent to allow competition in the EELV program.

In addition to revising its acquisition strategy, DOD undertook significant efforts to obtain greater insight into program costs in advance of contract negotiations with ULA. In December 2013, DOD signed a contract modification with ULA, committing the government to buy 35 launch vehicle booster cores over a 5-year period, and the associated capability to launch them. The new contract represents significant effort on the part of DOD to negotiate better launch prices through its improved knowledge of contractor costs, and DOD officials expect the new contract to realize significant savings, primarily through stable unit pricing for all launch vehicles. DOD is also leading a broader competition for up to 14 additional launches, expected to begin in fiscal year 2015.

In advance of the upcoming competition for up to 14 EELV-class launches, DOD is considering several approaches to how it will require competitive proposals to be structured. If DOD requires offers be structured similar to the way it currently contracts with ULA, there could be benefits to DOD and ULA as both are familiar with this approach, but potential burdens to new entrants who would have to change current business practices. Alternatively, if DOD implements a commercial approach to the proposals, DOD could lose insight into contractor cost or pricing, as this type of data cannot be required under a commercial item acquisition by the Federal Acquisition Regulation. DOD could also require a combination of elements from each of these approaches, or develop new contract requirements for this competition.

Chairman Durbin, Ranking Member Cochran, and Members of the Subcommittee:

I am pleased to be here today to discuss efforts to reintroduce competition in the Department of Defense's Evolved Expendable Launch Vehicle (EELV) program—our nation's primary provider of launch vehicles for U.S. military and intelligence satellites. The Department of Defense (DOD) expects to spend about $9.5 billion over the next five years acquiring launch hardware and services through its EELV program, during which time it will also be working to certify new launch providers to compete for launch contract awards against the incumbent and heretofore sole launch provider, the United Launch Alliance (ULA). The most recent total program cost was estimated at nearly $70 billion through the end of the program in 2030.[1] In view of the importance of the national security space launch enterprise, we have been asked to look at many aspects of the EELV program over the past ten years, including overall progress of the program, program oversight, uncertainties related to the formation of ULA, development of the most recent launch vehicle acquisition strategy, DOD implementation of a certification process for new launch companies, and DOD's upcoming space launch competition.

Today I will discuss (1) changes in the EELV acquisition strategy since its inception, including DOD's December 2013 contract modification with ULA, and (2) the upcoming competition for up to 14 EELV-class launches and the implications to DOD, ULA and potential launch providers of two possible DOD approaches to structuring competitive launch proposals. My testimony is based on the body of work we have performed on the EELV program in recent years and related reports issued from June 2004 to March 2014.[2] We have interviewed DOD and industry officials, conducted contract reviews, assessed knowledge of the industrial base, and analyzed program acquisition strategies, among other things. All work on which this testimony is based was performed in accordance with generally accepted government auditing standards. Those standards

[1] The Office of the Secretary of Defense, Cost Assessment and Program Evaluation conducted an independent cost estimate based on the EELV programmatic forecast dated June 2012.

[2] This testimony is based in part on a recent launch report we prepared for the Homeland Security and Governmental Affairs Committee, Permanent Subcommittee on Investigations: See GAO, *The Air Force's Evolved Expendable Launch Vehicle Competitive Procurement,* GAO-14-377R (Washington, D.C.: March 4, 2014).

require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Changes in the EELV Acquisition Strategy since its Inception

DOD began the EELV program in 1995 to provide a new generation of launch vehicles to ensure affordable access to space for government satellites. DOD planned to choose a single contractor with the most reliable and cost-effective design, but in November 1997, the Office of the Secretary of Defense (OSD) approved maintaining competition between two contractors. The decision was based on commercial forecasts at that time, which showed growth in the launch market would support more than one provider, and that the resulting competition would translate into lower prices for the government. In 1998, DOD competitively awarded "other transaction agreements" to Boeing and Lockheed Martin for the development of their respective families—the Delta IV and Atlas V vehicles—and the associated launch infrastructure to meet EELV program requirements.[3]

The robust commercial launch market upon which OSD based the acquisition strategy of maintaining competition between two launch companies never materialized, and estimated prices for future contracts along with total program costs, increased. In 2005, DOD revised the EELV acquisition strategy to reflect the collapse of the commercial launch market and the ensuing erosion of the industrial base which DOD believed threatened its assured access to space. The new strategy acknowledged the government's role as the primary EELV customer, and the need to maintain assured access to space by funding two launch vehicle families. The new strategy addressed language from the 2004 National Space Transportation Policy directing DOD to fully fund fixed costs for EELV, and DOD shifted its focus to mission success above all else. The revised strategy included two negotiated contracts for each

[3] Additional Forms of Transactions Authorized – The Secretary of Defense and the Secretary of each military department may enter into transactions (other than contracts, cooperative agreements, and grants) under the authority of this subsection in carrying out basic, applied, and advanced research projects. The authority under the this subsection is in addition to the authority provided in section 2358 of this title to use contracts, cooperative agreements, and grants in carrying out such projects. 10 U.S.C. § 2371(a).

company, one paying for launch capability and the other for launch services. DOD officials acknowledge that the contract structure was difficult to understand, with the “capability” contract paying for items such as overhead on launch pads and production facilities, engineering support, and administrative salaries, and the “services” contract paying for launch vehicle hardware and touch labor, or labor associated with building the vehicles.

Shortly after DOD revised the acquisition strategy in 2005, Boeing and Lockheed Martin announced plans to consolidate their launch operations into a joint venture combining production, engineering, test, and launch operations associated with U.S. government launches. By joining together, the companies said they could provide the government with assured access to space at the lowest possible cost. The Federal Trade Commission was initially opposed to the ULA joint venture because of the likelihood it would limit competition in the launch industry, but DOD stated that having two launch vehicle families presented unique national security benefits that outweighed the loss of competition, and the joint venture officially began operations in December 2006. ULA successfully consolidated Atlas V and Delta IV production and launch operations, despite many uncertainties at the time, and the joint venture contributed to unparalleled EELV mission success. According to DOD, the EELV program was focused on mission success—not cost control—in the ensuing years, until budget preparations in 2010, when DOD officials predicted EELV program costs would increase at an unsustainable rate. The predicted cost growth was due to possible instabilities in the launch industrial base, and according to DOD officials, the inefficient buying practice of purchasing one vehicle at a time.

In light of significant increases in EELV program costs estimates, DOD recognized the need to reorganize the way it acquired launch services. DOD officials conducted or commissioned several studies to evaluate alternatives to its EELV business model, among other things, and to contribute to the development a new EELV acquisition strategy. We reported in September 2011 that DOD needed to ensure the new acquisition strategy was based on sufficient information, and we made seven recommendations to the Secretary of Defense to assist in furthering this goal. DOD generally concurred with our

recommendations.[4] Additionally, we reported that introducing competition into the EELV program could incentivize ULA pricing and efficiencies, potentially yielding cost savings to the government. DOD's new EELV acquisition strategy was finalized in November 2011. It was designed among other things to maintain mission success, stabilize the U.S. launch industrial base, reduce launch costs, and allow competition for launch contract awards. The 2011 EELV acquisition strategy advocated a steady launch vehicle production rate that would yield both economic benefits to the government through larger lot buys of vehicles, and a predictable production tempo over time to help stabilize the launch industrial base. It also introduced the government's intent to allow competition in the EELV program.

In addition to revising the acquisition strategy, DOD undertook significant efforts to obtain greater insight into program costs in advance of recent contract negotiations with ULA. For example, DOD officials and the National Reconnaissance Office cost analysis group collected detailed data on engine prices and subcontractor costs, which DOD had not previously looked into. DOD also scrutinized launch processes to identify and eliminate potentially redundant activities. As a result of these and other activities, DOD contracting officials had a stronger bargaining position to lower overall contract costs than in previous negotiations, and in December 2013, DOD signed a contract modification with ULA, committing the government to buy 35 launch vehicle booster cores over a five-year period, and the associated capability to launch them.[5] The new contract represents significant effort on the part of DOD to negotiate better launch prices through its improved knowledge of contractor costs, and is expected to realize significant savings primarily through stable unit pricing for all launch vehicles. The new contract is also expected to provide DOD with a better understanding of individual launch costs than it had under previous contracts, as some costs are now directly attributable to specific launches, such as propellants, transportation, and costs associated with launch mission integration. Greater understanding of

[4] GAO, *Evolved Expendable Launch Vehicle: DOD Needs to Ensure New Acquisition Strategy Is Based on Sufficient Information,* GAO-11-641 (Washington, D.C.: Sept. 15, 2011).

[5] The booster core is the main body of a launch vehicle. In the EELV program, common booster cores are used to build all of the Atlas V and Delta IV launch vehicles. Medium and intermediate launch vehicles use one core each, while the Delta IV Heavy launch vehicle requires three.

individual launch costs would likely prove beneficial in comparing launch proposals from ULA and other potential launch providers as part of the DOD-led competition for up to 14 additional launches, expected to begin in fiscal year 2015.

The Upcoming EELV Launch Competition and Implications of Potential Approaches

DOD's competition for up to 14 launches representing specific EELV-class missions that are to start launching beginning in fiscal year 2017 is intended to be open to any launch provider certified to compete for national security space launches.[6] There are currently several new entrants in varying stages of the DOD launch vehicle certification process that may be poised to compete for these missions. If no new entrants are certified in time to compete, DOD plans to award the launches to ULA. DOD officials told us they intend to use a best value approach in evaluating offers from all competitors, meaning that factors in addition to price will be considered. For example, DOD may also consider mission risk, taking past performance into account, and satellite vehicle integration risks, including the complexity of integrating the intended satellite or sensor onto each company's launch vehicle. DOD is currently developing its methodology for comparing launch proposals, including establishing how proposals are to be structured, and what the specific evaluation criteria will be. DOD is considering several ways to structure the proposals. If DOD requires offers to contain both fixed-price and cost-reimbursement features for launch services and capability, respectively, similar to the way it currently contracts with ULA, there could be benefits to DOD and ULA, but potential burdens to new entrants. Alternatively, if DOD implements a fixed-price commercial approach to the launch proposals, DOD could lose insight into contractor cost or pricing, because of the less-restrictive data requirements imposed on commercial acquisitions by the Federal Acquisition Regulation.[7] That is, companies cannot be required to submit cost or pricing data under a commercial item acquisition. DOD could also require a combination of elements from each of these approaches, or develop new contract requirements for this

[6] Launch providers can become certified by following the steps outlined in the 2011 Air Force Launch Services New Entrant Certification Guide.

[7] Federal Acquisition Regulation Part 12 outlines processes for acquiring commercial items, which are defined as items that are customarily used by the general public or by non-governmental entities for purposes other than governmental purposes. Some features of FAR Part 12 contracts include less insight into cost or pricing data, and fixed-price contract types.

competition. We examined key benefits and challenges of the first two approaches, as they relate to DOD, ULA and launch companies that would be new entrants. Table 1 summarizes the benefits and challenges to each entity of these two approaches.

Table 1: Potential Procurement Approaches DOD is Considering for Competitive Launch Contract Awards

	Combined Fixed-price Launch Services/Cost-Reimbursement Launch Capability		Fixed-price Commercial	
	Benefits	*Challenges*	*Benefits*	*Challenges*
DOD	DOD is familiar with this approach and has experience negotiating under these terms DOD retains some insight into contractor cost or pricing data which could lend itself to a better bargaining position in future contract negotiations By requiring all companies to submit offers using this structure, DOD would have a straightforward basis on which to compare proposals	DOD use of a cost type contract may negate some efficient contractor business practices and cost savings due to government data requirements under this approach DOD could end up paying for launch capability at more than one launch provider	Cost of contract is identified at the time of award Full and open competition could help to decrease launch prices and increase efficiencies Could facilitate a uniform comparison of launch vehicle prices between companies	DOD access to contractor cost or pricing data would be very limited DOD may lose some flexibility in rescheduling launches if satellite deliveries slip; rearranging launch manifest could add cost Demand for EELV-class launches may diminish after 2018; launch market may not sustain more than one provider
United Launch Alliance (ULA)	DOD funds ULA launch capability to 8 launches; ULA could offer only the additional cost to launch any vehicle above the 8 launches DOD has paid for, giving ULA a price advantage over new entrants ULA would likely get the benefit of a long history of launch successes ULA is familiar with DOD satellite integration requirements, given its role as the EELV program's sole launch provider	None identified	ULA could phase out business systems fulfilling government cost or pricing data requirements, potentially reducing expenses	ULA's price offer could be higher than new entrant offers, as: • ULA previously stood up business systems to fulfill government cost or pricing data requirements, which would not be required of new entrants under this approach • ULA developed, demonstrated and continues to launch heavy launch vehicles, the most expensive vehicles to build and launch; new entrants are not required to develop and build heavy launch vehicles for this competition

	Combined Fixed-price Launch Services/Cost-Reimbursement Launch Capability		Fixed-price Commercial	
New Entrants	New entrants are not required to develop and demonstrate heavy vehicles to compete for the 14 launches; this could give them a price advantage over ULA Federal Acquisition Regulation prohibits a lack of past performance from being counted against new entrants	DOD does not fund launch capability for new entrants; this could give ULA a price advantage over new entrants Including a cost-reimbursement portion in new entrant launch proposals would require new entrants to develop and install new business systems to fulfill government data requirements	New entrant price offers could be lower than ULA's, as: No added government cost or pricing data requirements would allow companies to keep current business practices Focusing the competition on price considerations without accounting for launch capability costs could help prevent new entrant price offers from rising	None identified

Source: GAO Summary

DOD expects to competitively award launch contracts for these launches through fiscal year 2017, which also represents the intended end of the five-year contract with ULA. After that, DOD anticipates full and open competition for launch services, provided there is more than one certified launch provider. One issue that may resurface at that time is whether there will be enough government and commercial demand for launch services to sustain more than one provider, or whether DOD should focus on a single best provider.

Chairman Durbin, Ranking Member Cochran, and Members of the Subcommittee, this concludes my statement. I will be happy to answer any questions that you or other Members of the Subcommittee have at this time.

GAO Contact and Staff Acknowledgments

For questions about this statement, please contact Cristina Chaplain at (202) 512-4841, or at chaplainc@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Individuals making key contributions to this testimony were Art Gallegos, Assistant Director; Pete Anderson, Claire Buck, Raj Chitikila, Laura Hook, and John Krump.