



OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION,
TECHNOLOGY
AND LOGISTICS

INFO MEMO

June 21, 2012

OASD(A): _____

FOR: UNDER SECRETARY OF DEFENSE (AT&L)

FROM: DIRECTOR, PERFORMANCE ASSESSMENTS AND ROOT CAUSE ANALYSES
(PARCA) *S AB*

SUBJECT: PARCA's Root Cause Analysis of the Evolved Expendable Launch Vehicle
Program

- This memorandum summarizes PARCA's root cause analysis of the Evolved Expendable Launch Vehicle (EELV) Program's cost growth which triggered a critical Nunn-McCurdy breach reported to Congress in April 2012. There are critical breaches in both Average Unit Procurement Unit Cost (APUC) and Program Acquisition Unit Cost (PAUC) of 58 percent against both the original (2004) and the current (2007) baselines. The Air Force attributes the growth to a combination of quantity reduction from 137 to 91 launch vehicles and increased production costs due to less than optimal launch service procurement. PARCA has identified three root causes which account for 52 points, or 90 percent, of the cost growth.
- The unique economic features of this program are important: EELV's private sector contracted work is divided into two roughly equal contracts; the "launch vehicles" are paid for on a fixed-price contract and EELV's "infrastructure" is paid for on a cost-plus instrument. The terms "launch vehicles" and "infrastructure" are in quotes because they are misleading. More than a quarter of the "infrastructure" contract is associated with vehicle manufacturing and is interpreted so broadly that approaching 90 percent of the cost contract is for labor directly assigned to individual missions.
- In the context of this partitioning of work content, the 58 percent increased unit cost shows up in two main components: approximately 26 percent on the infrastructure cost-plus contract; and 26 percent on the launch vehicles' fixed-price contract.
- The first 26 percent is remarkable in light of the 90 percent fraction of the work that would appear to be, on other DoD projects, direct costs associated with specific products (launches). Total costs for the cost-plus have increased modestly; rising almost ten percent from the 2004/2007 baseline of \$9.4 billion to \$10.3 billion, while launches have dropped by a third. The situation begs two possible explanations.
 - National Security Presidential Directive – 40 (NSPD – 40)'s direction on covering "annual fixed costs" has been interpreted to mean all the people and activities to support a total of eight launches per year irrespective of whether actual launches fall below that number. Thus, while launches declined by a third, these activities (which are not

supposed to include the rockets, see below) were structured in such a way that it did not adjust to this reduction. This implies that money has been spent on effectively idle personnel.

- The cost structure of EELV is, in fact, much higher than was anticipated in the baseline estimate. Under this explanation, unit costs were rising sharply but our lower launch tempo was sufficient to free up many of the resources required to cover the schedule.
- While we conclude that there are some of both factors in the cost changes, we were not able to definitively segregate them, but neither one is a tribute to the program's management or the incentive environment in which the program is being conducted.
- The second 26 percent of the cost growth shows up as rising costs in the fixed-price, "launch vehicle" procurement portion of EELV's work. The offered reason is the rising costs due to international and commercial market conditions. While this is true, we note:
 - Although the contract structure is reasonable, the current environment is not conducive to controlling costs. For better or worse, the program is saddled with an almost exclusively single-source supplier environment. For example, some of the supply chain issues, like the cost increases associated with the Russian-manufactured engine, would have manifested itself regardless of the quantity purchased. Yet, with no threat of effective competition, the Department, the EELV program, and prime contractor are in a poor negotiating position and pay the price demanded. Although United Launch Alliance (ULA) asserts they have multiple initiatives in place to reduce supplier costs, we found little evidence of noticeable results from these efforts on balance.
 - There is some reason to suspect that this 26 percent growth on the launch vehicles is understated. There appears to be a gray zone between the two contracts. For example, much of the cost contract's content — about 25 percent of the total — is for manufacturing related and supply chain support activities. To the extent that manufacturing content is moveable into the cost-plus domain, the gray zone reduces price control pressures on the contractor. We could not ascertain if such content shifting was occurring and ULA assures there are very few issues relative to the demarcation of the two contracts. We note only that this frontier exists between the two contracts and is regulated in a way that does not make it obvious what the issues are.
- We conclude that the program's problems stem from three root causes, two of which are beyond the program's control. Nothing can change the inherently unstable nature of the demand for launch services since it is driven by space program execution and national priorities. The international space market and industrial base issues are also causal and likewise immutable. The final cause is poor program execution due to an environment in which little incentive for cost control, or threat of termination, exists for the vast proportion of EELV's content which is not tied to the fixed infrastructure for space access.

COORDINATION: NONE

Prepared By: Gary R. Bliss, OUSD (AT&L)/PARCA, 571-256-0646 (USA003640-12)