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ACQUISITION,
TECHNOLOGY
AND LOGISTICS

INFO MEMO

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OASD(A):_____

FOR: UNDER SECRETARY OF DEFENSE (AT&L)

FROM: DIRECTOR, PERFORMANCE ASSESSMENTS AND ROOT CAUSE ANALYSES (PARCA) AAB 11 May 2012

SUBJECT: PARCA's Discretionary Root Cause Analysis of the Poseidon Program

- While there are still test program issues to be resolved, the Poseidon (P-8A) program appears likely to deliver the required capability within the overall budget. The purpose of this memo is to report PARCA's analysis of the P-8A program.

- P-8A program has displayed limited cost growth since its baseline was established in 2004. The PAUC is essentially unchanged and the APUC has decreased by nearly 5%. While development costs have increased by $650M BY2010 or 9%, this does not affect APUC and, like many programs, has a minor impact on PAUC.

- The relatively stable APUC and PAUC can be attributed to:

  - A realistic plan for cost and schedule. We find the following elements to be critical to formulating a realistic initial cost estimate.

    - The development of a realistic and complete set of requirements. Based on previous experience from the P-7 and P-3 update, it appears that the definition of P-8 requirements was well informed. For example, the decision to base threshold avionics requirements on existing P-3 capabilities minimized the possibility of requirements being misinterpreted. By focusing on the airframe only, the requirements were simplified.

    - Investment in early design work in a Component Advanced Development (CAD) phase for both contractors prior to MS B resulted in more realistic estimates for lines of code in the software development. That early design work led to the doubling of the estimate for the lines of code that resulted in an increase of funding for software development shortly after contract award. Also, during the CAD, the contractors made detailed cost data available on analogous subsystems which improved the government estimates and increased their credibility.

    - Utilization of COTS and common components, such as the commercial airframe, P-8A engine, auxiliary power unit, and commercial cockpit, allowed for the use of commercial pricing and improved confidence in the production estimate.

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- The development schedule was consistent with historical averages despite pressure to replace P-3.

- Contractor bids, obtained under competitive pressure, were not used for establishing a budget. The increase in development cost would have been significantly greater if the contractor's initial bid of $3.9B had been used rather than the original 2004 RDT&E estimate of $6.9B (TY$). The resulting budget stability permitted the program to fully fund development, testing facilities, and producibility efforts (including small modifications to the commercial production line to reduce production costs).

- Historical data on weight growth was used to predict future growth, based on current program experience. Mitigation actions were taken and allowances made to accommodate future growth.

- The selection of a commercial airframe facilitated better estimate accuracy and leveraged Boeing's incentive to control costs for the commercial market. But, it also introduced risk; as the commercial Boeing 737 airframe accounts for nearly half of the recurring flyaway costs. Successfully leveraging a commercial product depends heavily on continued commercial demand and continued compatibility with government uses. In this case, the government has benefited from the increasing demand for the 737, with Boeing planning to increase monthly production rates by nearly 50% to 42 aircraft per month by 2014.

- Control of the production costs. This is largely because of an adherence to the Boeing 737 commercial production line and processes, and minimizing changes to the design that would affect the production line.

- Project plan incorporated flexibility.

  - Realistic off-ramps were developed for technical challenges. For example, two critical technologies identified in 2007, the acoustic bellringer algorithms and the data fusion technology developed issues and were replaced with backup technology.

  - Adequate funding for development allowed the program office to: fix design and drawing problems associated with the interface between Boeing commercial and Boeing Defense, minimize system integration risks through development of a system integration lab, and handle unexpected events such as a Boeing strike and testing program delays.

  - A common and shared view of data allowed for the early identification of problems.

  - Ability to defer new requirements into future increments.

COORDINATION: NONE

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