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The Jeep at 70: A Defense Acquisition Success Story

p. 360 *Brian J. Duddy*

The successful development of the jeep during World War II (WWII) was a long process of requirements development, testing, and experimentation of small reconnaissance cars, and incorporation of lessons learned from WWI transport vehicles. The jeep prototype was initially developed by American Bantam Company, but later designs by Willys-Overland and Ford were also evaluated during the acquisition process. Changes in laws and procurement procedures also impacted execution of the jeep development program. Eventually, a single vehicle design was standardized and produced during the war, primarily by Willys-Overland, but also by Ford. The design of the jeep has endured as an acquisition success story. Lessons learned from the jeep development can still be applied to systems acquisition programs today.

A New Look at Enablers and Barriers to Performance Based Life Cycle Product Support (PBL) Implementation

p. 376 *Thomas R. Edison and Andre Murphy*

Efficient and effective product support development and implementation are not simple. Increasingly, more focus is being placed on how to deliver cost-wise and effective product support. In an environment of Better Buying Power—greater efficiency and productivity in defense spending—a need to better understand and implement product support that is performance outcome-based is not only prescribed, but prudent. PBL can provide desired performance based product support. A 2005 study unearthed perceived PBL enablers and barriers. This article is a byproduct of 2011 research contrasting the 2005 study's PBL barriers and enablers. Through survey of the acquisition workforce, data were collected on 15 PBL implementation factors. This article discusses current working perceptions that either encourage or impede PBL implementation.

Running With Scissors: Defense Budget Cuts and Potential Industry Responses

p. 394 *Bryan A. Riley*

Nearly everyone can relate to the experience of seeing a dangerous sequence of events unfold. A well-intentioned action is followed by a subtle misstep. Add in a measure of unpredictability, and quickly the sequence starts to diverge. In these situations, a reasonable person mentally fast-forwards to anticipate the possible outcome. It is that quick mind's eye picture that spurs action. It prompts intervention. Building on the analysis and recommendations presented in this article, the author makes the case that it is possible for both the U.S. Department of Defense and the U.S. defense industry to mitigate the dangerous downside risk of anticipated defense budget cuts.

Applying Early Systems Engineering: Injecting Knowledge into the Capability Development Process

p. 422 *Mark Pflanz, Chris Yunker, Friedrich Wehrli, and Douglas Edwards*

A common problem in defense acquisition is the difficulty in ensuring that the required capabilities stated in capability development documents are technically feasible, affordable, and available through mature technologies. This problem is driven by a lack of knowledge on both the capability developer and program manager teams. Addressing this knowledge gap requires a new approach to capability development, where knowledge gained early in the process is injected into the capability development process in a rigorous way. This article describes that new technical approach along with lessons learned on two large acquisition programs. Key tenets include the use of pre-planned knowledge points as a vehicle for expanded collaboration between program managers and capability developers, and early use of systems engineering fundamentals.

Improving Acquisition Outcomes Through Simple System Technology Readiness Metrics

p. 444 *Chad L. Dacus*

This article advocates the use of simple technology readiness metrics that focus on system-wide technological maturity. Current DoD practice is to set guidelines for the maturity of individual system components, but the statistical evidence provided in this article demonstrates that more holistic metrics should be adopted. A simple system technology readiness metric is proposed and evaluated based on historical cost and schedule performance, and is shown to be potentially quite useful in avoiding poor acquisition outcomes. Finally, the policy implications of implementing a decision rule based on the metric are explored in depth, and the DoD is advised to pursue and encourage applied research for the development of more comprehensive technology readiness metrics.

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