Reducing Lifecycle Sustainment Costs

Hon David J. Berteau
Assistant Secretary of Defense (Logistics and Materiel Readiness)
**Reducing Lifecycle Sustainment Costs**

**Assistant Secretary of Defense (Logistics and Materiel Readiness), 3500 Defense Pentagon, Washington, DC, 20301-3500**

Presented at the 12th Annual Acquisition Research Symposium held May 13-14, 2015 in Monterey, CA.
Life Cycle Costs

By the start of Procurement, ~90% of O&S Costs are decided based on design and programmatic decisions.

Efforts to reduce O&S costs during the O&S phase have marginal impacts.

By the end of Concept Exploration, ~70% of O&S Costs are decided based on the materiel solution selected.

Optimizing the system for O&S Costs during the RDT&E phase allows the greatest ROI.
O&S Costs as a Percent of Total Life Cycle Cost

O&S Costs range from 42% - 73% of total life cycle costs

Source: OSD CAPE Analysis May 2009
External Impacts

- O&S Cost Estimating
  - O&S cost estimates reflect “peacetime perfection”.
  - Cost growth above inflation is greater than cost estimating inflation indices – a major driver in today’s costs.

- Reliability/Maintainability Improvements
  - Reliability improvements do not always decrease O&S costs (but will always increase readiness).
  - Condition Based Maintenance is required by OSD Policy, but funding is not allocated for its implementation.
  - Technology Refresh often requires non-recurring engineering investment, but the Working Capital Funds can not be used to pay this expense.
Operating & Support (O&S) Cost Reduction

May 14, 2015

Dr. Rick Burke
Deputy Director, Cost Assessment
OSD CAPE

12th Annual Acquisition Research Symposium
Cost Assessment
Agenda

• History of O&S Cost Analyses and Estimates
  – Prior to WSARA of 2009
  – Post WSARA—O&S Cost Estimates Early and Often
  – O&S Cost Estimating Guide

• It’s about the Data!—O&S Cost Actuals
  – VAMOSC Systems
  – Cost and Software Data Reports (CSDRs)
    • Contractor Logistics Support Contracts
    • Includes subcontractor reporting
  – Effects of Enterprise Resource Planning (ERP) systems
    • Industry
    • Government

• Keys to Achieving O&S Cost Reduction
O&S Cost Estimating Guide

• O&S cost-estimating guide (*published March 2014*)
  – Uses of O&S cost information at milestone reviews
  – Common data and analytic methods
  – Cost Assessment review process
  – Presentation formats with sample briefing charts

• Standardized cost terms and definitions
  – Organized as a taxonomy (i.e., O&S cost element structure)

O&S Cost Data: VAMOSC

- DoD 5000.04-M provides guidance for VAMOSC data systems *(At WHS for final issuance)*
  - Establishes requirement for historical data collection system that supports well-defined, standard presentation formats for all major fielded systems
  - Flexible level of detail (platform, subsystem, component)
  - CAPE provides policy and conducts oversight
  - Military departments are allowed considerable latitude in implementation
    - Army: OSMIS
    - Navy: Navy VAMOSC
    - Air Force: AFTOC

- Naval VAMOSC Study underway to ensure it is the authoritative source for Navy/Marine Corps O&S Cost Data
CSDR Data We Collect Today

CSDRs

“The Dictionary”
Contract Data Reporting Structure Dictionary
Lists all contract data reporting elements with definitions of technical, work & cost content

“The Cost Summary”
Cost Data Summary Report (1921)
Summary cost data for all elements on approved contract CSDR plan

“Functional Breakout”
Functional Cost-Hour Report (1921-1)
Cost and hour data (REC/NRE) for specific elements broken down by functional category

“By Tail Number”
Progress Curve Report (1921-2)
Lot or Unit reporting of direct recurring costs to date for specific hardware elements; Technical Characteristics

“Business Base”
Contractor Business Data Report (1921-3)
Direct and Indirect cost, hour and employee data by functional category for a Contractor Business Unit

“Sustainment”
Contractor Sustainment Report (1921-4/5)
Nonrecurring and recurring costs reported against a sustainment cost element structure

“Software”
Software Resource Data Report (SRDR)
Size, schedule and effort data on software development
Cost reporting for contractor sustainment costs is in its infancy relative to reporting of acquisition (i.e., development and procurement) cost actuals.
Implications of ERP Systems

• Reporting of KTR Cost Actuals (for O&S) becomes easier
  – Modern ERP systems deployed in industry are very powerful
  – Must ‘tag’ relevant data structure early to map to desired cost reporting structure
  – Reporting requirement must be established early, included in RFP
  – Post-award KTR/USG meeting to finalize reporting plans

• Contractor submissions can be simplified in the future
  – Currently reported electronically in structured format (1921-4/5)
  – To be replaced by “flex files”—files may be large (~1 million lines)
  – New tools required to receive and manipulate large files

• Both industry and government making progress in ERPs
  – Industry data systems ahead of government systems
  – Specific O&S needs in government: depots, software centers, VAMOSC/ERP interfaces
Achieving O&S Cost Reductions

• Early O&S Cost Estimates are essential
  – Estimates in AoAs, at MS A, at MS B
  – O&S Cost Targets for MS A, Cost Caps at MS B
  – An affordability analysis and management strategy is critical

• Collect O&S Cost Actuals to Compare to Estimates
  – VAMOSC reporting for operational systems
  – Cost and Software Data Reports
    • Contractor Logistics Support Contracts—Include in RFP
    • Plans should address key subcontractors
  – Early reliability data from test program is important

• Skilled analytic workforce to identify/analyze targeted cost reductions
  – Collaboration with contracting community for success
BACKUPS
### Sustainment Plans in Process

<table>
<thead>
<tr>
<th>Service</th>
<th>Program</th>
<th>Current Data Reporting Structure</th>
<th>O&amp;S CES – Based Plans</th>
<th>Approved Plan</th>
<th>Subcontractor Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Army</td>
<td>Apache AH-64 D/E (5)</td>
<td>N/A</td>
<td>1921 O&amp;S Format</td>
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<tr>
<td>USAF</td>
<td>B-2</td>
<td>1921 O&amp;S CES</td>
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<td>C-130J</td>
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<td>2016 Awards</td>
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<td>USAF</td>
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- Insertion Point for sustainment requirement is either Major Contract Mod or New Contract
- Slides updated 4/13/15
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<tbody>
<tr>
<td>USMC</td>
<td>Medium Tactical Vehicle</td>
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<td>Replacement</td>
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<td>Shadow</td>
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<td>T-45 Engines</td>
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<td>881C 1921</td>
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<td>1921 O&amp;S CES</td>
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Logistics and Product Support
Roles and Responsibilities
Reducing Life Cycle Costs Through Sustainment Planning

- AF committed to the total life cycle management of systems – from initial acquisition to disposal
  - In FY12, PEOs given total life cycle management responsibility
  - PSM position mandated for ACAT I/II programs

- Shorter acquisition reporting chain facilitates increased focus on life cycle costs

- Affordability is enabled by maintaining a competitive environment throughout the life cycle

- Requires early, deliberate sustainment planning to:
  - Own the Technical Baseline
    - Delivery of appropriate data rights
    - Greater insight into contract cost drivers
  - Structured analysis of product support strategy (e.g., BCA, should-cost assessments)
  - Early Depot Repair planning and standup of Core capabilities
    - Reduce reliance on Interim Contract Support (ICS)
    - Stand up of initial Mx and Repair at DSOR Location
  - Ensure effective use of Performance Base Logistics (PBLs)

Affordability is our Top Sustainment Concern
Assessing Sustainment in the Future

- Develop core tenets of sustainability to guide planning, such as:
  - Technical Data rights and delivery as contract cost competitive elements
  - No New MDS-unique Mx/SC IT Systems...focus on improving what we have
  - Standard Mx Tech Data format – for example: S1000D standard
  - Start Core workload at CITE locations early in program’s lifecycle
  - Common Support Equipment & Automatic Test Systems for standard functions

- Evaluate Life Cycle Sustainment Plans for adherence to core tenets
  - Clear expectations for the program and the reviewers

- Establish Sustainment Readiness Levels (1-n)
  - Measure and report on program compliance

- Codify sustainment outcomes in Policy and enforce during reviews

Drive Sustainment Further to the Left in the Acquisition Process
REDUCING LIFECYCLE SUSTAINMENT COSTS

Mr. Scott DiLisio
Director, Strategic Mobility/Combat Logistics Division
Chief of Naval Operations

Presentation to:
12th Annual Acquisition Research Symposium
14 May 2015
LIFE CYCLE COST HISTORICAL PRINCIPLES

- Drivers: Cost, Schedule, Performance
- Estimate program costs
- Interpret design trades
- Program Affordability
- Acquisition Boundaries (Nunn McCurdy)
- Use historical basis for cost analogy
- Establish formal estimate
- Gain approval for program within program boundaries

Institutional Myopia
Life Cycle Cost Revised Principles

- Establish and agree with life cycle cost relationships, measure and assess business impacts
- Synergy & commonality with existing inventory
- Consider standalone vice integrated capability
- Innovate / reuse / repurpose
- Behavior / utilization
**Waves we are on…**

- **Fiscal Constraints**
- **Better Buying Power 3.0**
- **Additive Manufacturing**
- **Energy Issues**
- **Sustainability Challenges**

**Our Stakeholders:**

- **The public**
- **Congress**
- **International Community**

*Why is this conversation important?*

*We need to unlock and unleash innovation…*
TASK FORCE
INNOVATION

- Build the Naval Innovation Network
- Manage the Talent of the DON Workforce
- Improve the Use of DON Information
- Accelerate New Capabilities to the Fleet
- Develop Game-Changing Warfighting Concepts

- Naval Innovation Advisory Council
- Assessing Innovation in the Workforce
- DON Key Strategic Issues List
- Wargaming