

Product Support Manager (PSM) Workshop

Director, Life Cycle Logistics Policy
Office of the Deputy Assistant Secretary of the Army
Acquisition Policy and Logistics
August 23-24, 2011

M-ATVs awaiting fielding in Afghanistan, 2010





Security Briefing and Admin Notes





Welcome and Purpose



DESIGN • DEVELOP • DELIVER • DOMINATE
WE MAKE SOLDIERS STRONG

Assistant Secretary of the Army
(Acquisition, Logistics and Technology)



Purpose



The purpose of the Product Support Manager's Workshop is not to train you but to **dialogue with you** and address how we will shape our policy to help you succeed.

Topics for the dialogue:

- Focus to your efforts
- Information to stimulate thought
- Reporting guidance
- Mission, functions, roles and responsibilities
- Necessary training
- Roadblocks (perceived or real)
- Thoughts on how to make this succeed
- Policy that supports your needs





DTM, PSM Duties, PSM elements & LCSP





PSM Implementing Directives



- Public Law 111-84 (Reference (b)) directs a change to DoD policies designed to improve weapon systems life cycle management and product support by establishing new requirements that directly impact acquisition, fielding, and sustainment decisions.
- USD(AT&L) memorandum, Subject: Directive-Type Memorandum (DTM) 10-015 – Requirements for Life Cycle Management and Product Support, October 6, 2010.
- USD(AT&L) memorandum, Subject: Government Performance of Critical Acquisition Functions, August 25, 2010.
- ASA(ALT) memorandum, Subject: Product Support Manager (PSM) Implementation, November 5, 2010.





DTM 10-015 Applicability



- OSD, Military Departments, Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, Combatant Commands, Office of the Inspector General of the Department of Defense, Defense Agencies, DoD Field Activities, and all other organizational entities within the Department of Defense
 - Major Defense Acquisition Programs (ACAT I) = KLPs
 - Major weapon systems (ACAT II) programs = CAPs
 - Former ACAT I/II programs that are post-Initial Operational Capability (IOC) or no longer have program managers (PMs) reporting to Component Acquisition Executives (CAE)
-
- ACAT III programs are not mandated to have a PSM nor has the AAE directed this to occur





Product Support Business Model





DoDI 5000.02 Changes Directed by DTM 10-015



PSM. “CAEs shall identify and assign a PSM within every ACAT I and ACAT II program, prior to but no later than program initiation and to former ACAT I/II programs that are post-IOC or no longer have PMs reporting to CAEs”

DUTIES OF THE PSM. The principal duties of the PSM are to:

- Provide weapon systems product support subject matter expertise to the PM for the execution of the PM’s duties as the Total Life Cycle Systems Manager, in accordance with DoD Directive 5000.01
- Develop and implement a comprehensive, outcome-based, product support strategy.
- Promote opportunities to maximize competition while meeting the objective of best-value long-term outcomes to the warfighter.
- Seek to leverage enterprise opportunities across programs and DoD Components.
- Use appropriate analytical tools and conduct appropriate cost analyses, including cost-benefit analyses, as specified in Office of Management and Budget Circular A-94 to determine the preferred product support strategy.
- Develop and implement appropriate product support arrangements.
- Assess and adjust resource allocations and performance requirements for product support, not less than annually, to meet warfighter needs and optimize implementation of the product support strategy.
- Document the product support strategy in the Life Cycle Sustainment Plan (LCSP)
- Conduct periodic product support strategy reviews and revalidate the supporting business case analysis prior to each change in the product support strategy or every 5 years, whichever occurs first.





PSM Duties

- Providing Weapon Systems Product Support Subject Matter Expertise. The PSM shall provide weapon systems product support subject matter expertise to the PM for the execution of his or her duties as the Total Life Cycle System Manager. In support of this PM responsibility, the PSM shall have a direct reporting relationship and be accountable to the PM for product support.
- Developing And Implementing A Comprehensive Product Support Strategy. The product support strategy is designed to assure achievement of warfighter capability-driven life cycle product support outcomes documented in performance-based agreements, generally expressed in preferred terms of weapon system materiel availability, reliability, and operations and support cost affordability. The strategy should identify the execution plan to deliver integrated product support (IPS) elements to the warfighter, producing the best value balance of materiel readiness and total ownership cost.



KEY PSM RESPONSIBILITY: INTEGRATED PRODUCT SUPPORT

Design Interface 

Sustaining
Engineering



Supply Support



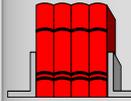
Maintenance Planning
& Management



Packaging, Handling, Storage
& Transportation (PHS&T)



Technical
Data



Support
Equipment



Training &
Training Support



Manpower
& Personnel



Facilities &
Infrastructure



Computer
Resources



Product Support Management



Product Support is enabled by a package of 12 Integrated Product Support (IPS) Elements designed to deliver system readiness & availability while optimizing system life cycle cost



PSM Duties (Cont'd)



- Promoting Opportunities To Maximize Competition While Meeting The Objective Of Best-Value Long-Term Outcomes To The Warfighter. Tradeoffs between the benefits of long-term relationships and the opportunity for cost reductions through competitive processes should be considered together with associated risk.
- Seeking To Leverage Enterprise Opportunities Across Programs And DoD Components. Joint strategies are a top priority where more than one DoD Component is the user of the respective major weapon system or variant of the system. Likewise, product support strategies should address a program's product support interrelationship with other programs in their respective portfolio and joint infrastructure, similar to what is performed for operational interdependencies.





PSM Duties (Cont'd)

Using Appropriate Analytical Tools To Determine The Preferred Product Support Strategy. Analytical tools can take many forms (analysis of alternatives, supportability analysis, sustainment business case analysis, life cycle impact analysis), dependent upon the stage of the program's life cycle. These analytical tools shall incorporate the use of cost analyses, such as cost-benefit analyses, as well as other appropriate DoD and Service guidance. These tools are used to help identify the best possible use of available DoD and industry resources at the system, subsystem, and component levels by analyzing all alternatives available to achieve the desired performance outcomes. Additionally, resources required to implement the preferred alternative should be assessed with associated risks. Sensitivity analyses should also be conducted against each of the IPS elements and tracked to determine those IPS elements where marginal changes could alter the preferred strategy.





PSM Duties (Cont'd)



Documenting The Product Support Strategy In The LCSP. The LCSP describes the plan for the integration of sustainment activities into the acquisition strategy and operational employment of the support system. The PSM prepares the LCSP to document the plan for formulating, integrating, and executing the product support strategy (including any support contracts) to meet the warfighter's mission requirements. The LCSP shall be updated to reflect the evolving maturity of the product support strategy at each milestone, full rate production (FRP), and prior to each change in the product support strategy or every 5 years, whichever occurs first. The LCSP is approved by the milestone decision authority at each milestone and FRP decision. Updates to the LCSP for all major weapons systems after the FRP decision shall be approved by the CAE, in coordination with DASD for Materiel Readiness.





Life Cycle Sustainment Plan



The LCSP should be tailored to meet program needs documenting the current program plan in the following areas:

- The maintenance and support concepts
- How the sustainment metrics will be achieved and sustained throughout the life-cycle
- How sustainment is addressed as an integral part of the program's acquisition strategy and system design process
- The assigned responsibilities and management approach for achieving effective and timely acquisition, product support, and availability throughout the life-cycle including the Program Manager's role in planning for and executing sustainment
- The funding required and budgeted by year and appropriation for the main sustainment cost categories including operating & support costs
- The plan for identifying and selecting sources of repair or support
- The sustainment risk areas and mitigation plans
- Product support implementation status
- Results and recommendations from DoD Component Independent Logistics Assessments (ILA)





Minimum focus areas



1. Current Program Description - Describes how sustainment considerations are being implemented in the program.

1.1 Sustainment and Maintenance Concepts - Overview of the program support strategy

1.2 Sustainment Acquisition Strategy - Overview of sustainment/logistics contracts (including the extent to which it is traditional transaction based/process focused and performance based/outcome focused)

1.3 Sustainment Funding/Budget - Program funding (by colors of money) to implement the sustainment strategy

1.4 Stakeholders - Relationships, roles, and responsibilities of key players (e.g. user, supply chain, industry, etc.)





Minimum focus areas (Cont'd)

2. Program Performance/System Indicators & Requirements - Describes the key sustainment metrics. This section should include each metric along with its definition, objective, threshold and either its current projected value or its actual measured value.

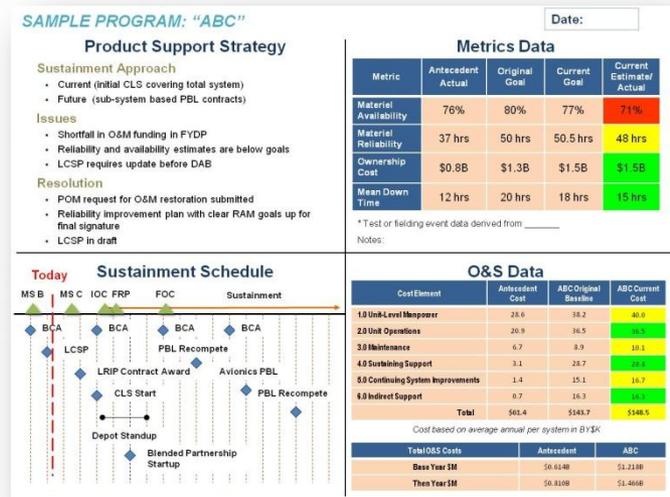
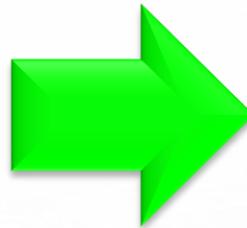
2.1 Materiel Availability

2.2 Materiel Reliability

2.3 Mean Down Time

2.4 Ownership Cost

2.5 Additional key sustainment enabler metrics





Minimum focus areas (Cont'd)



3. Sustainment Implementation Plan

3.1. Supportability Design Characteristics - Describes the key requirements included in the system and design specifications.

3.2. Supportability Analysis Process - Describes the processes included in the Systems Engineering Plan being used to establish and keep the product support elements in balance in achieving the sustainment metrics.

3.3. Product Support Package - Describes the major product support elements and plan for fielding the PSP meeting the outcome requirements within statutory and Component mandates.





Minimum focus areas (Cont'd)



3.4. Sustaining the Weapon System - Describes the systems engineering and management strategies to sustain the metrics including how ranges and triggers will be used.

4. Program Schedule - Shows how major sustainment actions/events fit with the overall program master schedule at the current funding levels.

5. Special Interest Items - Describes any additional information on key technologies, initiatives or enablers the program is using to implement the sustainment strategy and reduce total ownership costs the program wishes to highlight. (e.g. human systems integration (HSI), supply chain integration (including item unique identification (IUID)/radio frequency identification (RFID) technologies, diminishing manufacturing sources/materiel shortages (DMSMS), etc.)





PSM Duties (Cont'd)



Conducting Periodic Product Support Strategy Reviews. The product support strategy evolves with the maturation of the weapon system through its various life cycle phases. At FRP, the LCSP should describe how the system is performing relative to the performance metrics and any required corrective actions to ensure the metrics are achieved. Reviews and revalidations of the strategy should be performed at a minimum of every 5 years or prior to each change in the strategy to ensure alignment across system, subsystem, and component levels in support of the defined best-value outcomes. In those situations where a support strategy is at the weapon systems level, the PSM's reassessment should explore potential opportunities for evolving toward a portfolio approach. In those situations where an LCSP is based on a collection of outcome-based product support strategies at the subsystem or component level, the periodic review should explicitly address integrated performance at the weapon systems level. In all situations, the reassessment should consider opportunities to make better use of industry and DoD resources.





Additional Guidance



- The PSM must be designated in the Life Cycle Logistics position category (see <http://www.dau.mil/workforce/pages/pcds.aspx>)
- In support of the PM's responsibility, the PSM shall have a direct reporting relationship and be accountable to the PM for product support. This does not preclude the PSM from having a dual reporting relationship to a DoD Component logistics or materiel command
- For Major Defense Acquisition Programs, major weapon systems, and programs that are post-IOC or no longer have PMs reporting to CAEs, the PSM may have a direct reporting relationship to a DoD Component logistics, sustainment, or materiel command.
- In implementation of this DTM, the positions of PSM, Director of Logistics, Assistant Program Manager for Logistics, Deputy Program Manager for Logistics, Program Lead Logistician, and System Support Manager are considered synonymous
- PSM positions for Major Defense Acquisition Programs must be designated as KLPs
- PSM positions for all major weapon systems must be certified at Defense Acquisition Workforce Improvement Act (DAWIA) Level III in the Life Cycle Logistics career field which includes achievement of general educational, training, and experience requirements
- Cross-certification at DAWIA Level II or above in the Program Management, Systems Planning Research Development and Evaluation, or Business-Financial Management career fields should be considered as valued criteria during the selection process
- DoD Components are encouraged to establish PSM positions for other acquisition programs not defined as major weapon systems





Expectations for the PSM



- Support the PM
- Facilitate Lifecycle Management
- Communicate, communicate, communicate!
- Broad knowledge of systems engineering process
- Design for Sustainment (Life Cycle Management) Knowledge
- Understanding of acquisition & sustainment
- Focused on delivering performance outcomes to meet warfighter product support requirements
- Optimized readiness within reasonable cost
- Focused on long-term, best value product support outcomes
- Integration of acquisition and sustainment planning and execution across the entire life cycle
- Document the product support strategy in the LCSP





Discussion #1

PSM Focus Areas





Focus Areas

We know you have been assigned to manage it all...so here are the areas that are most important...

- **Reliability**
- **Availability**
- **Mean Down Time (Maintainability)**
- **Cost**
- **Lifecycle Sustainment Plan (LCSP)**

This is what you must manage!



Product Support Strategy

Sustainment Approach

- Current (initial CLS covering total system)
- Future (sub-system based PBL contracts)

Issues

- Shortfall in O&M funding in FYDP
- Reliability and availability estimates are below goals
- LCSP requires update before DAB

Resolution

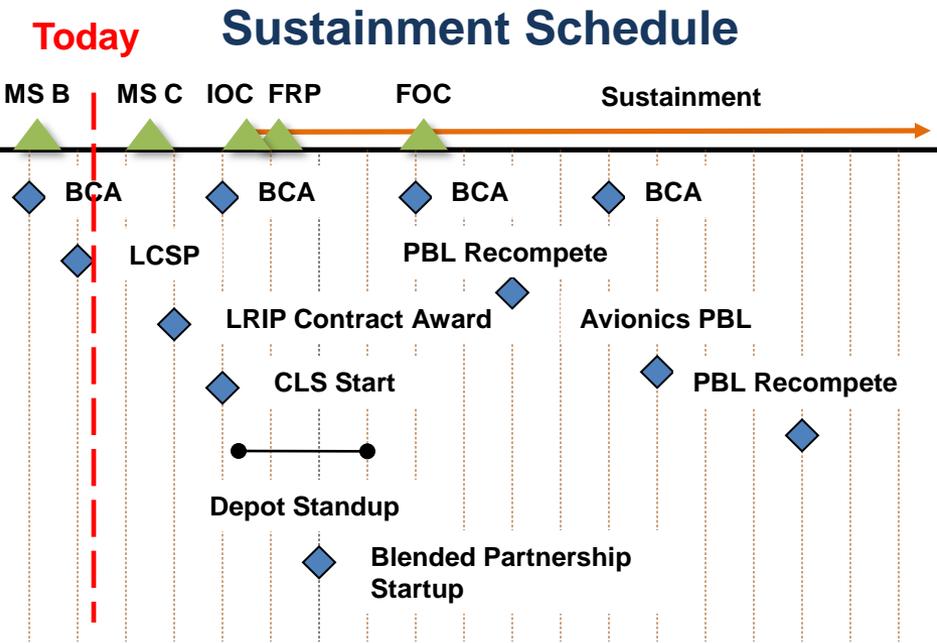
- POM request for O&M restoration submitted
- Reliability improvement plan with clear RAM goals up for final signature
- LCSP in draft

Metrics Data

Metric	Antecedent Actual	Original Goal	Current Goal	Current Estimate/ Actual
Materiel Availability	76%	80%	77%	71%
Materiel Reliability	37 hrs	50 hrs	50.5 hrs	48 hrs
Ownership Cost	\$0.8B	\$1.3B	\$1.5B	\$1.5B
Mean Down Time	12 hrs	20 hrs	18 hrs	15 hrs

* Test or fielding event data derived from _____

Notes:



O&S Data

Cost Element	Antecedent Cost	ABC Original Baseline	ABC Current Cost
1.0 Unit-Level Manpower	28.6	38.2	40.0
2.0 Unit Operations	20.9	36.5	36.5
3.0 Maintenance	6.7	8.9	10.1
4.0 Sustaining Support	3.1	28.7	28.8
5.0 Continuing System Improvements	1.4	15.1	16.7
6.0 Indirect Support	0.7	16.3	16.3
Total	\$61.4	\$143.7	\$148.5

Cost based on average annual per system in BY\$K

Total O&S Costs	Antecedent	ABC
Base Year \$M	\$0.614B	\$1.218B
Then Year \$M	\$0.810B	\$1.466B

Program Funding & Quantities								(BY yyyy)	Curr Est	Δ Current	Δ Original
								PAUC:	55.7M	+4.6%	+10.2%
								APUC:	50.4M	-3.2%	+60.2%
(\$ in Millions / Then Year)	Prior	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY13-17	To Comp	Prog Total
RDT&E											
Prior \$ (PB 12)	108.0	32.4	44.2	45.1	37.9	12.4	5.3	-	100.8	-	285.4
Current \$ (POM 13)	108.0	32.4	44.2	45.6	38.3	12.5	5.4	-	101.8	-	286.4
Delta \$ (Current - Prior)	-	-	-	0.5	0.4	0.1	0.1	-	1.0	-	1.0
Required ¹ \$	108.0	32.4	44.2	45.6	46.0	15.0	6.5	-	113.0	-	297.6
Delta \$ (Current - Required)	-	-	-	-	(7.7)	(2.5)	(1.1)	-	(11.2)	-	(11.2)
PROCUREMENT											
Prior \$ (PB 12)	-	99.9	150.4	200.2	304.8	618.6	627.6	-	1,751.2	2,257.3	4,258.8
Current \$ (POM 13)	-	99.9	150.4	203.1	309.2	522.9	530.5	538.1	2,103.8	1,954.5	4,308.6
Delta \$ (Current - Prior)	-	-	-	2.9	4.4	(95.7)	(97.1)	538.1	352.5	(302.7)	49.8
Required \$	-	99.9	150.4	203.1	312.3	528.1	535.8	543.5	2,122.8	1,974.1	4,347.1
Delta \$ (Current - Required)	-	-	-	-	(3.1)	(5.2)	(5.3)	(5.4)	(19.0)	(19.5)	(38.6)
MILCON											
Prior \$ (PB 12)	-	-	1.3	1.6	-	2.1	2.3	-	6.0	15.3	22.6
Current \$ (POM 13)	-	-	1.4	1.7	-	2.0	2.1	3.0	8.8	12.6	22.8
Delta \$ (Current - Prior)	-	-	0.1	0.1	-	(0.1)	(0.2)	3.0	2.8	(2.7)	0.2
Required \$	-	-	1.4	1.7	-	2.0	2.1	3.0	8.8	12.6	22.8
Delta \$ (Current - Required)	-	-	-	-	-	-	-	-	-	-	-
Weapon System O&M²											
Prior \$ (PB 12)	-	0.6	0.8	1.0	2.7	3.8	5.5	-	13.0	546.2	560.6
Current \$ (POM 13)	-	0.6	0.8	1.1	2.9	4.2	6.1	9.9	24.1	590.5	616.0
Delta \$ (Current - Prior)	-	-	-	0.1	0.3	0.4	0.6	9.9	11.2	44.2	55.4
Required \$	-	0.6	0.8	1.1	2.9	4.2	6.1	9.2	23.5	600.5	625.4
Delta \$ (Current - Required)	-	-	-	-	-	-	-	0.6	0.6	(10.0)	(9.4)
TOTAL											
Prior \$ (PB 12)	108.0	132.9	196.7	248.0	345.4	636.9	640.8	-	1,871.0	2,818.8	5,127.4
Current \$ (POM 13)	108.0	132.9	196.8	251.5	350.4	541.6	544.1	551.0	2,238.5	2,557.6	5,233.8
Delta \$ (Current - Prior)	-	-	0.1	3.5	5.0	(95.3)	(96.7)	551.0	367.5	(261.2)	106.4
Required \$	108.0	132.9	196.8	251.5	361.1	549.3	550.4	555.7	2,268.1	2,587.2	5,293.0
Delta \$ (Current - Required)	-	-	-	-	(10.8)	(7.7)	(6.4)	(4.8)	(29.6)	(29.6)	(59.2)
QUANTITIES³											
Prior \$ (PB 12)	-	2	3	4	6	12	12	-	34	41	80
Current \$ (POM 13)	-	2	3	4	6	10	10	10	45	35	80
Delta \$ (Current - Prior)	-	-	-	-	-	(2)	(2)	10	11	(6)	-
Required Qty	-	2	3	4	6	9	9	9	42	38	80
Delta Qty (Current - Required)	-	-	-	-	-	1	1	1	3	(3)	-

Note 1. Requirement Source: [e.g., OSD CAPE ICE, Oct 2011]

Note 2. O&M requirement assumes [e.g., a service life to 2035; includes ctr field mx, petro/oil/lube, spare/repair parts, depot mx, sustaining engineering & software mx.]

Note 3. Quantities in FY11-12 were funded with RDT&E



Group Discussion Task



1. Do you agree with the prescribed focus areas? If not, what would you change?
2. What areas do you believe are most important beyond the focus areas? (list top five and why)
3. What are the biggest concerns about the reporting metrics? (list top five and why)
4. What concerns do you have about the LCSP?
5. If there was one thing that the Army should tell Congress to change concerning the PSM, what would it be and why?





Discussion #2

Product Support and Sustainment activities





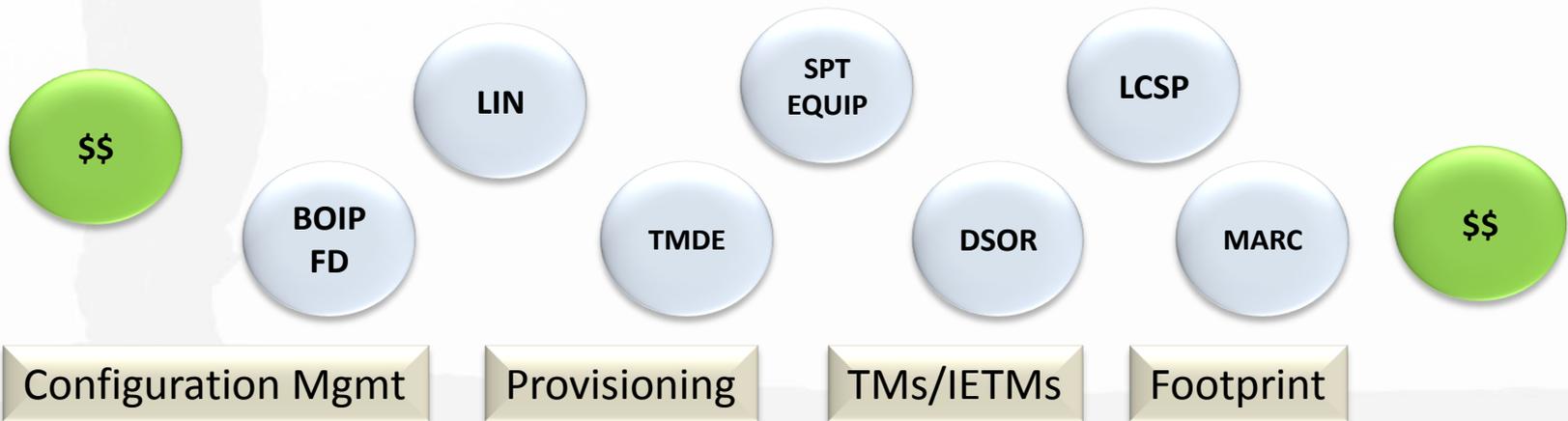
What Success Looks Like



Product Support Strategy

1. Plan for organic maintenance (Field and Sustainment)- *Start Point*
2. Plan to use Army supply-distribution system – *Start Point*
3. Consider alternatives that improve product support performance (reliability, availability, more efficient and effective)
4. Modify strategy based upon analysis to attain *best value*

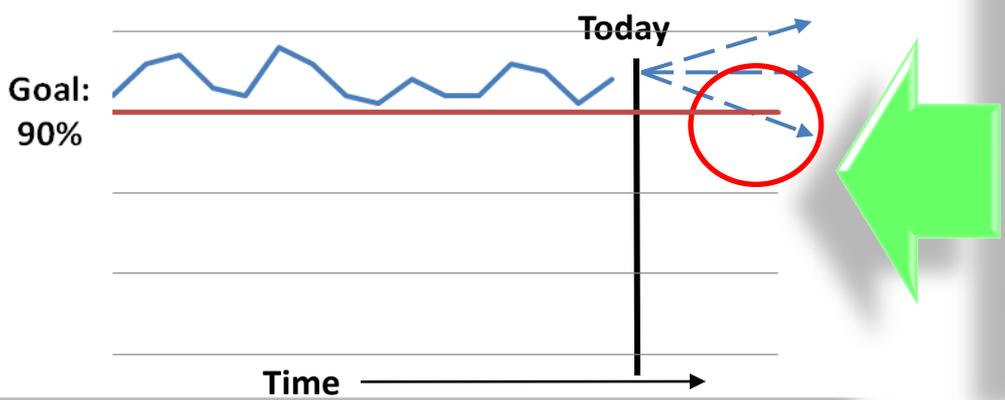
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Key Sustainment Considerations

Fleet Availability



Value Engineering Program

- Periodic Product Improvements
- Mitigate Obsolescence
- Leverage New Technologies
- Reduce Total Ownership Costs

Maintenance

- Major Components & Electronics
- Scheduled & Unscheduled Maintenance
- Special Tools and Test Equipment
- Contract Logistics Support
- Embedded Software Maintenance

Configuration Management

- Accurate Configuration Database
- Identify Part Obsolescence
- Maintain interoperability and integration with US standards (Hardware & Software)
- Upgrade to current Version

Supply Support

- Global Supply Chain
- Obsolescence
- Parts Availability
- Infrastructure
- Response Time





Elements that have to be right

- Up Front participation from all stakeholders
- Design - Reliability, Availability, Maintainability, Cost
- Footprint (Goal: No special tools, unique TMDE, etc)
- Leverage our organic capabilities - First and Always
- Use Army Supply Distribution System – Last tactical mile
- Simplify the supply system = Responsiveness
- Judicious use of contractors as a force multiplier
- Configuration management
- Technical Data/Data Rights
- Provisioning and Supply Support
- Materiel Integration and fielding...





Mean Logistics Delay Time

$Ao = \text{Mean Time Between Failures (MTBF)}$
 $(\text{MTBF} + \text{Mean Time To Repair (MTTR)} + \text{Mean Logistics Delay Time (MLDT)})$

What
MTBF
MTTR,
MLDT

Who
PM
PM
Field

How
Design driven (system specific)
Design driven (time, ex 30 min)
**ASL, distribution, manpower,
support equipment, etc.**



What are you using for MLDT?





Key Sustainment Activities



Key Activity	Driver of MLDT
Field Maintenance	<ul style="list-style-type: none">• Soldiers inspect, diagnose and repair• Priority of work• Training, expert systems & experience
Supply Support (PLL, ASL)	<ul style="list-style-type: none">• Demand supported• Ability to lift & store• Total Cost
Supply-Distribution	<ul style="list-style-type: none">• Availability of assets• Priority of shipment• Available transportation• Tactical situation• Time and distance
Sustainment Maintenance	<ul style="list-style-type: none">• Facilities and equipment• Skills, time and \$\$• Statutory restrictions

How much does the PSM really control?





Computation Example

Infantry Combat Vehicle (ICV)

Can we meet the requirement?

$$A_o = \frac{\text{Mean Time Between System Abort (MTBSA)}}{(\text{MTBSA} + \text{Mean Time To Repair (MTTR)} + \text{Mean Logistics Delay Time (MLDT)})}$$

$$\text{MTBSA} + \text{MTTR} + \text{MLDT} = \text{MTBSA}/A_o$$

$$\text{MLDT} = (\text{MTBSA}/A_o) - (\text{MTTR} + \text{MTBSA})$$

$$\text{MLDT} = (2364 \text{ hours (threshold)}/.95) - (2364 \text{ hours} + .5 \text{ hours (threshold)})$$

$$\text{MLDT} = 2488 \text{ hours} - 2364.5 \text{ hours}$$

$$\text{MLDT} = 124 \text{ hours or } 5.1 \text{ days}$$

Entire Sustainment Process (Inspect, diagnose, order parts, QC +other delays)?





Group Discussion Task



1. Will current sustainment processes support your product support strategy?
2. What sustainment processes/activities need to be improved? (list top 5 and why)
3. Can your product support strategy work using current logistics automation systems? If not, why?
4. What are your greatest concerns about an organic product support strategy (list top 5)
5. How could the sustainment activity better support your product?



As of: 01/10/2005

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WE MAKE SOLDIERS STRONG

Assistant Secretary of the Army

(Acquisition, Logistics and Technology)



Wrap-up



Thoughts?

