The Secretary of Defense Performance-Based Logistics Awards Program
for
Excellence in Performance-Based Logistics
in
Life Cycle Product Support

Section 2

Summary of Criteria Accomplishments

WARFIGHTER-BASED CAPABILITIES AND OUTCOMES

Mission Success: The Apache Sensors Performance Based Logistics (PBL) program for the Target Acquisition Designation Sight/Pilot Night Vision Sensor (TADS/PNVS) and Modernized TADS/PNVS (M-TADS/PNVS) provides critical supportability and readiness to the Warfighter during global peacetime and wartime operations. Under the PBL program, the Apache Sensors and Lockheed Martin team has consistently delivered required Warfighter readiness, maintaining mission capability at 100% during peacetime and Overseas Contingency Operations (OCO). During its peak operational tempo (OPTEMPO) of over 200K flying hours, the program exceeded the Supply Availability (SA) metric by an average of 10% worldwide. This program has also reduced costs by establishing innovative supply concepts that resulted in a cost avoidance of over $30M since the inception of PBL in 2007; with over $7M in cost avoidance in the past 12 months (July 2010–June 2011).

Materiel Availability: The Apache Sensors PBL program has contributed to the overall mission success of the AH-64D Apache helicopter by supporting over 670 Apache aircraft in 25 battalions worldwide, including multiple OCO forward operating bases. Since the implementation of Apache Sensors PBL, the SA metric has exceeded the 85% requirement by 10% with a current 90-day moving average of 97% (Figure 1). The team received and processed an unprecedented 14,933 unit requested Materiel Requisition Orders (MROs) since the inception of PBL, with over 3,000 materiel requisitions from July 2010 – June 2011, while increasing depot repair parts availability to 99%,

representing a 67% reduction in backorders over the past 12 months. This high rate of availability enabled the Apache Sensors PBL team to expedite assets back into the supply system resulting in a higher Warfighter materiel availability. When a critical part is needed, PBL ensures it is available.

Materiel Reliability: The Apache Sensors PBL Reliability and Maintainability program uses a closed loop Failure Reporting, Analysis and Corrective Action System (FRACAS) that evaluates all system operating failures to monitor trends and determine Root Cause / Corrective Action (RC/CA). This process provided the team with the data necessary to proactively identify and implement corrective actions and aggressively push system improvements to the field, increasing reliability. Examples of reliability improvements include: (1) drive motors being made more durable so they can endure the global environments in which they operate; (2) pilot display unit covers were designed to prevent system damage during transportation; (3) electronic circuit cards and cables were ruggedized to protect and prevent damage to them during field maintenance activities; and, (4) pilot hand controls were modified and enhanced to make them more durable. These Reliability and Maintainability improvements increased Mean Time Between Failures (MTBF) over 100% (Figure 2) of the derived requirement, resulting in a cost avoidance of $2.1M in the past 12 months.

Ownership Cost Reduction: The Apache Sensors PBL program has demonstrated a substantial ownership cost reduction. Prior to the Apache Sensors PBL contract award, the average sustainment costs for spare and repair parts were over $218M per year. Even though OPTEMPO reached record highs, the average cost per year of the Apache Sensors PBL program was reduced over 57% annually (Figure 3), resulting in an annual cost avoidance of $126M. The ownership cost reductions were achieved while increasing materiel availability through an aggressive retrograde program, increasing system reliability, and proactively working obsolescence cost avoidance. Under Apache Sensors PBL, the team identified an increased accelerometer demand on the M-TADS/PNVS due to servo jitter. Lockheed Martin performed a cost free one-for-one unit swap out from June 2010 through May 2011 resulting in a cost avoidance of $2.3M. The team also initiated a

provisioning change to allow accelerometers to be flight line replaceable, eliminating United States Government (USG) removal of the next higher assembly of M-TADS Turrets for accelerometer failures. This was a total cost avoidance of $11.2M since the problem was identified in early 2010.

SUSTAINMENT STRATEGY EFFECTIVENESS

Public-Private Partnering: Through an innovative performance-based partnership with the Aviation and Missile Command (AMCOM), the Integrated Materiel Management Center (IMMC), Letterkenny Army Depot (LEAD), and Lockheed Martin, the Letterkenny Special Repair Activity (LSRA) depot provides repair capability for the M-TADS/PNVS system. This partnership agreement enables skilled USG technicians to repair complex circuit cards and electro-optical hardware in a USG depot designated as the Apache Sensor PBL program Circuit Card Repair Center of Excellence. LEAD has a direct link to the factory to solve complex repairs by utilizing the design engineering resources and production engineers. This collaborative effort creates a win/win situation for the USG and Lockheed Martin, while assuring compliance with United States Code (USC) Title 10 and Department of Defense depot maintenance policies. The LSRA has the technical expertise to repair over 40% of the M-TADS/PNVS system. During the past 12 months, this public-private partnership completed a total of 1,690 repairs with an average repair turnaround time of 30 days and is a key contributor in achieving the SA metric.

Systems Engineering (SE) Approach: The Apache Sensor PBL program utilizes an integrated total systems engineering approach to guide technical planning and control to meet the principal contract metric of SA while providing exceptional service to the Warfighter. The Apache Sensors PBL team identified PBL critical health indicators to monitor PBL performance (e.g., flight hours, demand trends, months of demand, leading indicators, parts availability, repair rates, retrograde returns, No Evidence of Failure (NEOFs), supplier performance, etc.). This proactive approach allowed for early trend identification, fast stock posture adjustments, and increased levels of

mission capability for the Warfighter. All retrofit improvements, including software, are planned, coordinated, and integrated to minimize the impact to the fielded systems.

Footprint Reduction:

The Apache Sensors PBL program was designed to support an integrated two and three-level maintenance strategy to help reduce overall operations and support (O&S) costs. Under this innovative concept, M-TADS/PNVS enables removal and replacement of components in the field rather than returning the entire system to the depot, thus reducing the maintenance support footprint. Retrogrades of unserviceable assets have been expedited using regional Contractor Supply Support Activity (CSSA) locations (Fort Hood, Fort Campbell, Korea, Germany, and OCO), getting the hardware in the repair cycle and back onto the shelf for use. As a result of these retrograde and supply hardware turn-in initiatives, the average retrograde return rate is at an unprecedented 92%. Extensive modeling efforts conducted over the last year have resulted in 99% of parts requisitioned being filled at the regional support location, driving down the requisition processing time and spreading the available pipeline to the regional CSSA location that services the units with a greater need for the component. The further reduced footprint enabled by this regional support concept, coupled with contractor global commercial transportation agreements, shortens the overall logistics response time and delivers critical components directly to the Warfighter no matter where they are located.

Obsolescence Management: The Apache Sensors PBL program facilitates the successful Obsolescence Working Group (OWG) teaming arrangement between AMCOM, IMMC, and Lockheed Martin resulting in substantial cost avoidance. Since inception of the Apache Sensors PBL program, this team identified 367 unique obsolescence and Diminishing Manufacturing Sources (DMS) cases, driving 340 to successful resolution with an aggressive 92% closure rate that achieved $63.4M in cost avoidance. During the 1 July 2010 to 30 June 2011 time period, the OWG proactively streamlined notifications and case management processes to resolve DMS events. This

was critical to the success of the Apache Sensors PBL program highlighted by the $6.2M achieved in cost avoidance during this period. The OWG developed automated solutions to eliminate labor intensive tasks. This improved efficiency enabled the OWG to proactively identify and address DMS challenges. An example of this is illustrated by the successful management of the M-TADS display glass panel obsolescence. The M-TADS display is vital to the Warfighter's ability to accurately identify targets. During this period, the OWG rapidly executed a last-time buy of glass panels thus increasing supply levels and bridging the lead time gap between the obsolete and replacement components. This effort prevented a supply shortfall of display glass panels in 2013 (Figure 4) and avoided a 29% reduction of available spare displays. During this period, the OWG resolved an additional 99 obsolescence cases, representing a 48% increase in cases from the previous timeframe.

Innovative Contracting Support Approach: The Apache Sensors PBL contracting approach enables optimum performance while minimizing cost risk and providing cost flexibility to the USG and providing best support to the Warfighter. The collaboration of AMCOM, IMMC, Lockheed Martin, and the Defense Contract Audit Agency (DCAA) Liaison at Redstone Arsenal streamlined the contracting process to allow effective contracting and negotiating. The Apache Sensors PBL team jointly developed the PBL requirements (performance metric, Statement of Work (SOW), roles/responsibilities, terms and conditions, etc.) and derived an annual flight band table based on actual flying hours of the system. This allows USG flexibility to contract for actual usage of the Apache Sensor system with discretion to allocate costs needed to support higher OPTEMPOs. This firm fixed price contract is tied to flight band levels, accommodates multiple deployments, establishes new deployed CSSA locations, and allows the Apache Sensors PBL team opportunities to incorporate Class 2 reliability improvements into the hardware to reduce O&S costs of the system. The current PBL contract has resulted in a 53% reduction in contract modifications from the previous USG support contract.

Figure 1 – Supply Availability

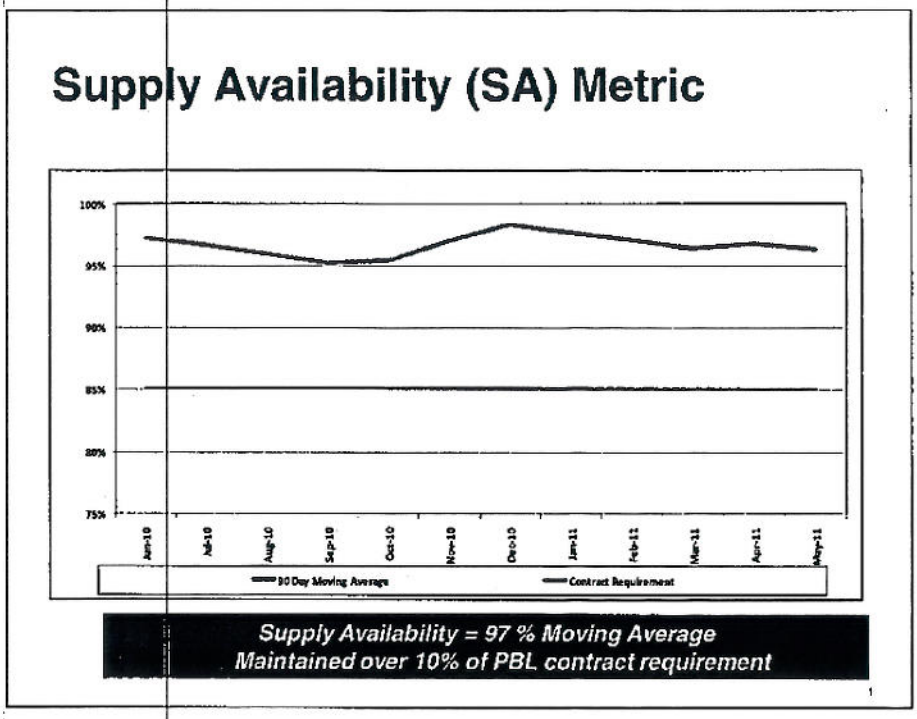


Figure 2 – Increased Mean Time Between Failures (MTBF)

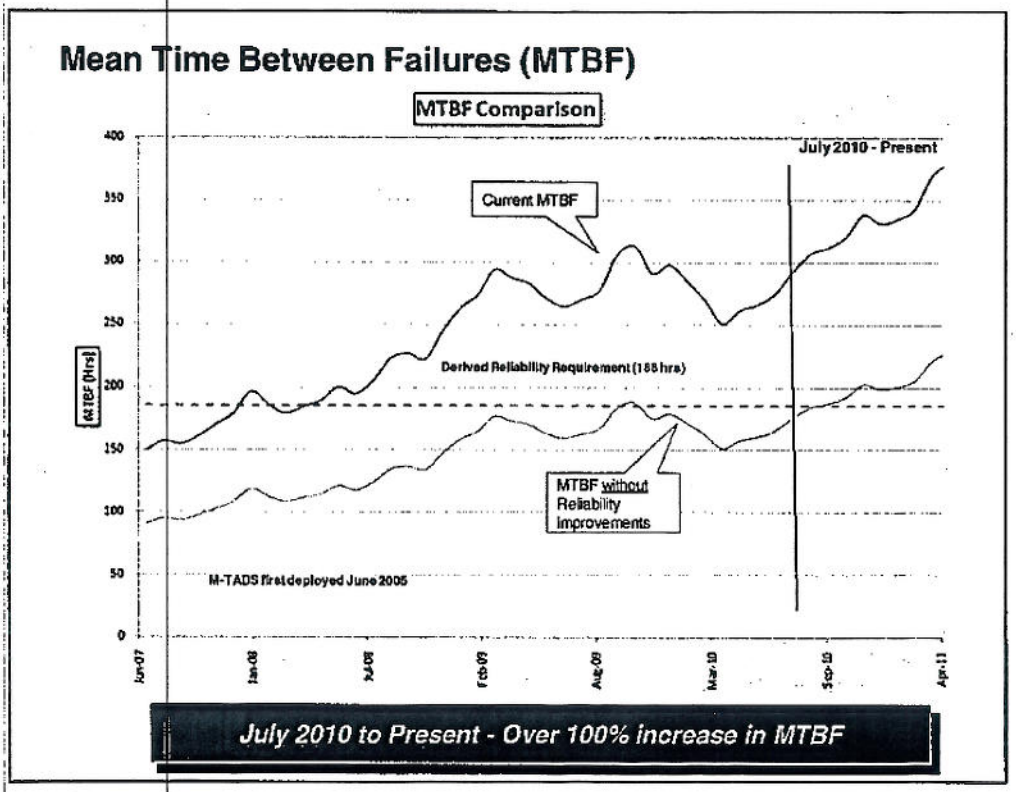


Figure 3 – Total Annual Ownership Cost

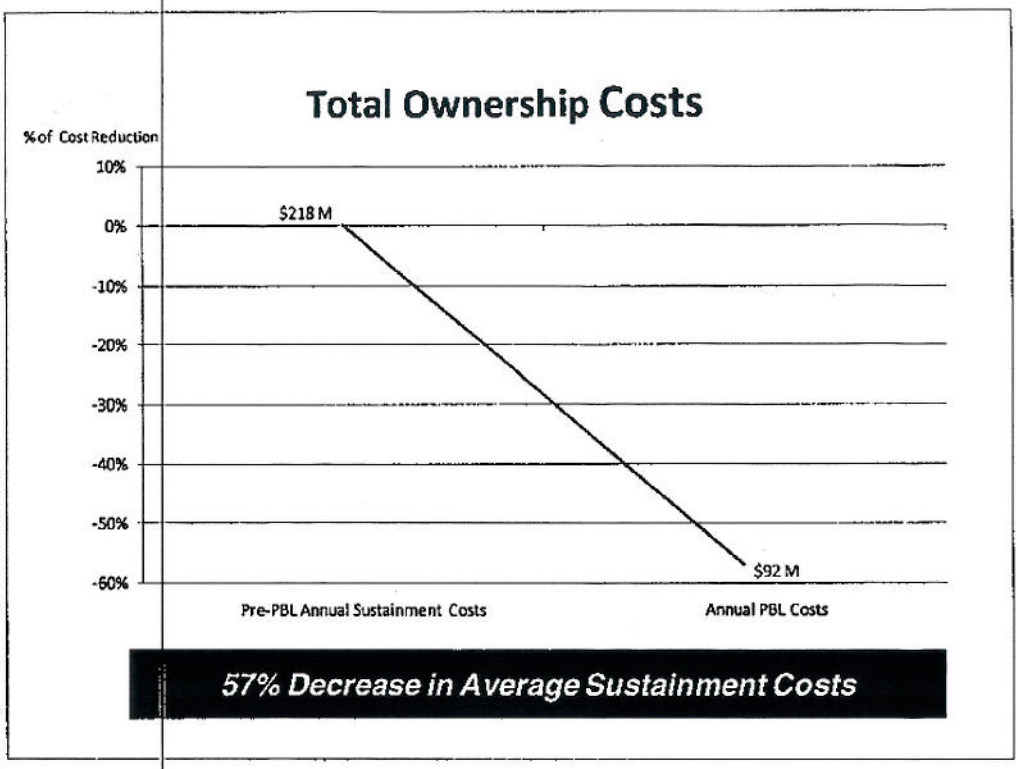
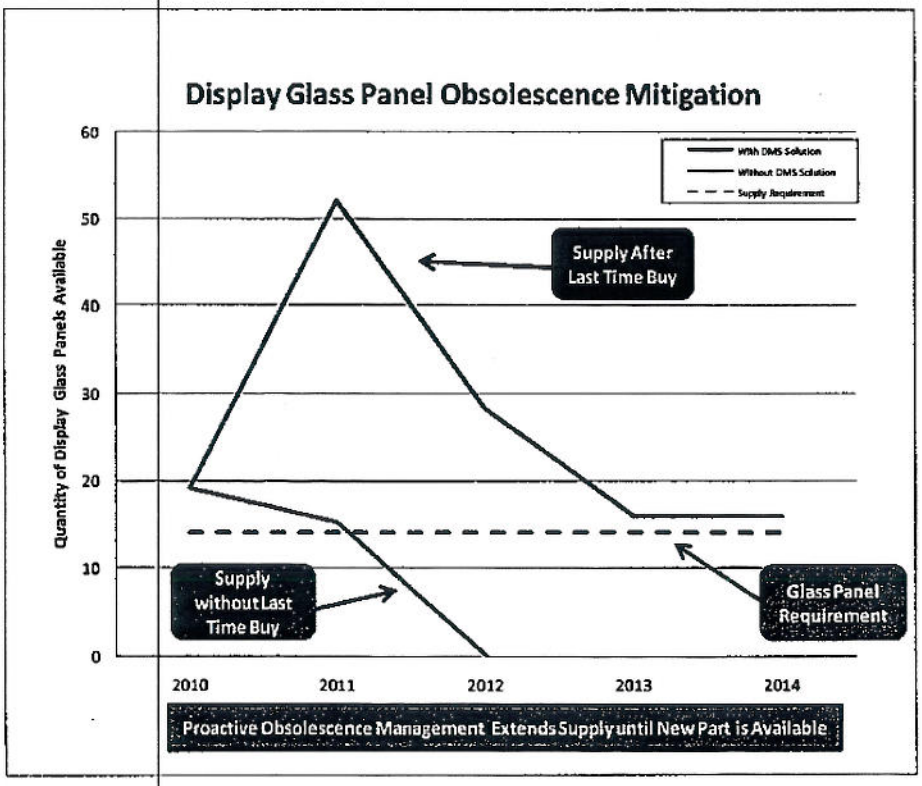


Figure 4 – Obsolescence Case - Display Glass Panels



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Section 4

Achievements

The AH-64 Sensors Performance Based Logistics (PBL) contract with Lockheed Martin supports the Target Acquisition Designation Sight/Pilot Night Vision Sensor (TADS/PNVS) and Modernized TADS/PNVS (M-TADS/PNVS) systems on the AH-64 Apache helicopter. The teamwork between the Warfighter, the United States Government, and Lockheed Martin Team on this Apache Sensors PBL contract has demonstrated a comprehensive solution to provide the Warfighter with the support needed that consistently meets or exceeds the required readiness rates. Some of the major achievements this year include: (1) a supply availability rate of 97% (current 90-day moving average); (2) an unprecedented 99% availability rate for depot repair parts; (3) materiel reliability improvements increasing Mean Time Between Failure (MTBF) over 100% above the Apache Sensors derived requirement resulting in a cost avoidance of over $16M; (4) a drop in sustainment costs for spare and repair parts resulting in a cost avoidance of $126M; (5) a public private-partnership with Letterkenny Army Depot (LEAD) repairing over 40% of the M-TADS/PNVS system; (6) the implementation of a systems engineering approach to supply chain management for early trend identification, fast stock posture, and increased mission capability levels; and, (7) the closure of approximately 99 obsolescence cases resulting in a $6.2M cost avoidance. To date, the program has been credited with improving fleet readiness, reducing average flying hour cost and reducing the Army's long-term inventory investment. This PBL effort has also created better visibility and control of the supply pipeline and, as a result, better support to the Warfighter. Apache Sensors PBL is a success story in Warfighter support, and the Warfighter is and will continue to be the primary focus of the efforts under Apache Sensors PBL.