

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 Modernized TADS/PNVS (M-TADS/PNVS) provides critical global sustainment support to the Soldier during peacetime and Overseas Contingency Operations (OCO). Under the PBL program, the Apache Sensors and Lockheed Martin (LM) team (Apache Sensors PBL team) has consistently maintained mission capability at 100% for the Soldier worldwide. During its peak operational tempo (OPTEMPO) of over 200,000 flying hours, the program exceeded the Supply Availability (SA) metric of 85% each month by 12%, resulting in a worldwide average SA rate of 97%. The forward deployed Contractor Support Supply Activities (CSSA) (Figure 1) have been a key contributor to this success. From July 2012-June 2013, the PBL program provided a SA rate of 99% for OCO which ensured that those in harm's way received the highest level of support. In addition, the PBL program reduced costs through reliability improvements and innovative supply concepts, resulting in a cost avoidance of over \$18.9M from July 2012-June 2013.

Materiel Availability: The Apache Sensors PBL program has contributed to the overall mission success of the AH-64D Apache helicopter by supporting over 670 aircraft in 27 battalions worldwide, including multiple OCO forward operating bases. The PBL program has established total asset visibility throughout the world and manages \$1.4B of Government-Owned/Contractor-Managed hardware, most of which is located at forward deployed locations to support the Soldier. Since the implementation of Apache Sensors PBL in April 2007, the SA metric has exceeded the

85% requirement by 12% with a current 90-day moving average of 97% (Figure 2). The Apache Sensors PBL team received/processed 1,770 unit requested Materiel Requisition Orders (MROs) from July 2012-June 2013 with zero backorders. The depot repair parts availability increased to 99%, improving the depot level repair process and aiding in the rapid availability of assets for the Soldier. The Apache Sensors PBL team expedited assets back into the supply system resulting in higher materiel availability for the Soldier. The combined efforts have produced an environment where supply availability is at record highs.

Materiel Reliability: One of the Apache Sensors PBL team's objectives is to increase readiness by reducing maintenance man hours. To do this, the Apache Sensors PBL Reliability and Maintainability program uses a closed loop Failure Reporting, Analysis and Corrective Action System that evaluates all system operating failures to monitor trends and determine Root Cause/Corrective Action. This process provides the data necessary to identify/implement corrective actions and proactively push improvements to the field, thereby increasing materiel reliability and improving maintainability, thus reducing the maintenance burden on the Soldier. Examples of reliability and maintainability improvements include adding a protective guard to prevent the heater blanket on the Modernized Night Side Shroud and Dayside Shroud from being damaged during field maintenance activities; adding clutches to the pilot display unit knobs to prevent the knobs from being overturned during system operation; redesigning the air flow gasket to improve durability during maintenance activities leading to proper airflow throughout the system; and, adding backshells onto electrical connectors increasing durability during field maintenance activities. These improvements sustained Mean Time Between Failures (MTBF) at 70% above the derived requirement and improved Mean Time Between Maintenance Actions (MTBMA) by 11% (Figure 3), resulting in a cost avoidance of \$18.9M from July 2012-June 2013 and a reduction in a total of 1,047 maintenance man hours.

SUSTAINMENT STRATEGY EFFECTIVENESS/EFFICIENCY

Operating and Support Cost Reduction: The Apache Sensors PBL program has demonstrated a substantial ownership cost reduction. Prior to the 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 4), 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. From July 2012-June 2013, the Apache Sensors PBL team worked closely with Corpus Christi Army Depot (CCAD) in the repair of M-TADS/PNVs crash battle damaged hardware. PBL's flexibility resulted in repair completion of a system within 45 days of receipt. Since PBL inception, the Apache Sensors PBL team has restored five M-TADS/PNVs systems back to full operation (with one completed from July 2012-June 2013) meeting 100% of the CCAD required delivery dates. This averted a requirement to purchase a total replacement system, resulting in \$4M cost avoidance. Another cost reduction was the TADS Turret (TTUR) Bracket/Harness (Bulkhead) changing to a flight line replacement instead of the labor intensive replacement of the entire M-TADS Turret. In lieu of removing the TTUR and sending it to the depot for Bulkhead replacement, 132 retrofits were completed on the flight line during July 2012-June 2013, reducing the maintenance time of removing and replacing the TTUR by 648 hours for the Soldier at a cost avoidance of \$9.3M.

Public-Private Partnering: Launched in 2006, the Letterkenny Special Repair Activity (LSRA) is an innovative performance based partnership with the Letterkenny Army Depot (LEAD) and LM. This partnership leverages highly skilled Government technicians and existing LEAD specialty shops/technicians. The partnership currently repairs 55% of the M-TADS/PNVs system (957 repairs from July 2012-June 2013 with an average turnaround time of 30 days) (Figure 5). An additional capability is the certification of LEAD's welding process allowing the LSRA to be

utilized as a shroud repair center reducing repair turnaround time by approximately two months, allowing assets to be returned quickly to the supply system. This public-private partnership is a solid “win-win” arrangement for the Government and LM.

Systems Engineering Approach: The Apache Sensor PBL program utilizes an integrated total systems engineering approach to meet the principal contract metric of SA. The Apache Sensors PBL team identified critical health indicators to monitor performance (e.g., flight hours, demand trends, leading indicators, repair rates, retrograde returns, No Evidence of Failure supplier performance, etc.). This proactive approach allows for early trend identification, fast stock posture adjustments, and increased levels of mission capability for the Soldier. All retrofit improvements, including software, are planned, coordinated, and integrated to minimize the impact to the fielded systems. Corrective actions, such as the Day Sensor Subassembly (DSSA) retrofit to a newer harness instead of a complete replacement of the DSSA, reduced maintenance time and decreased failures by 38% resulting in a cost avoidance of \$715K from July 2012-June 2013. Additionally, improvements to the Targeting Receiver Resolver that eliminates wire chaffing, has decreased returns by 40%, resulting in a cost avoidance of \$1.2M from July 2012-June 2013. The PBL contract provides great flexibility with failure trends immediately detected, confirmed, and corrective actions/solutions implemented.

Footprint Reduction: The Apache Sensors PBL program uses a regional support concept designed to support an integrated two-level maintenance strategy to help reduce overall Operating and Support (O&S) costs by eliminating a duplicate requirement to hold spares at all unit locations. Under this innovative logistics concept, M-TADS/PNVs enables removal/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 CSSA locations (Figure 1), inducting the hardware in the repair cycle and back to the unit to meet mission needs. As a result of these initiatives, the retrograde return rate is at an

unprecedented 96% (July 2012-June 2013) (Figure 6). 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 Soldier.

Obsolescence Management: The Apache Sensors PBL program facilitates the successful Obsolescence Working Group (OWG) teaming arrangement between the USG and LM, resulting in substantial cost avoidance. Since inception of the Apache Sensors program, this team identified 776 unique obsolescence and Diminishing Manufacturing Sources (DMS) cases, driving 759 cases inclusive of 91 cases (July 2012-June 2013) to successful resolution with an aggressive 97.8% closure rate that achieved \$104.2M in total cost avoidance. The OWG proactively streamlined notifications and case management processes to resolve DMS events and mitigate risk achieving \$18.7M cost avoidance from July 2012-June 2013. Automated Information Technology solutions improved efficiency from identification to resolution, decreasing the cycle time by 57% as illustrated by the Video Electronics Module (VEM). The OWG rapidly modeled and executed a lifetime buy of VEM critical components, thus increasing supply levels and bridging the gap between the obsolete and replacement components. This effort prevented a supply shortfall of VEMs in 2012 and increased the sustainment timeframe an additional 10 years.

Innovative Contracting Support Approach: The Apache Sensors PBL team derived an annual flight band table based on actual flying hours of the system. This concept provided the Government the flexibility to contract for actual usage of the Apache Sensor system, with discretion to allocate costs needed to support higher or lower 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. An example of the unique contracting approach is in obsolescence mitigation for a predetermined “cap” allowing the contractor to take immediate corrective action without additional funding or a contract action from the Government.

Figure 1 – Contractor Supply Support Activity (CSSA) Structure

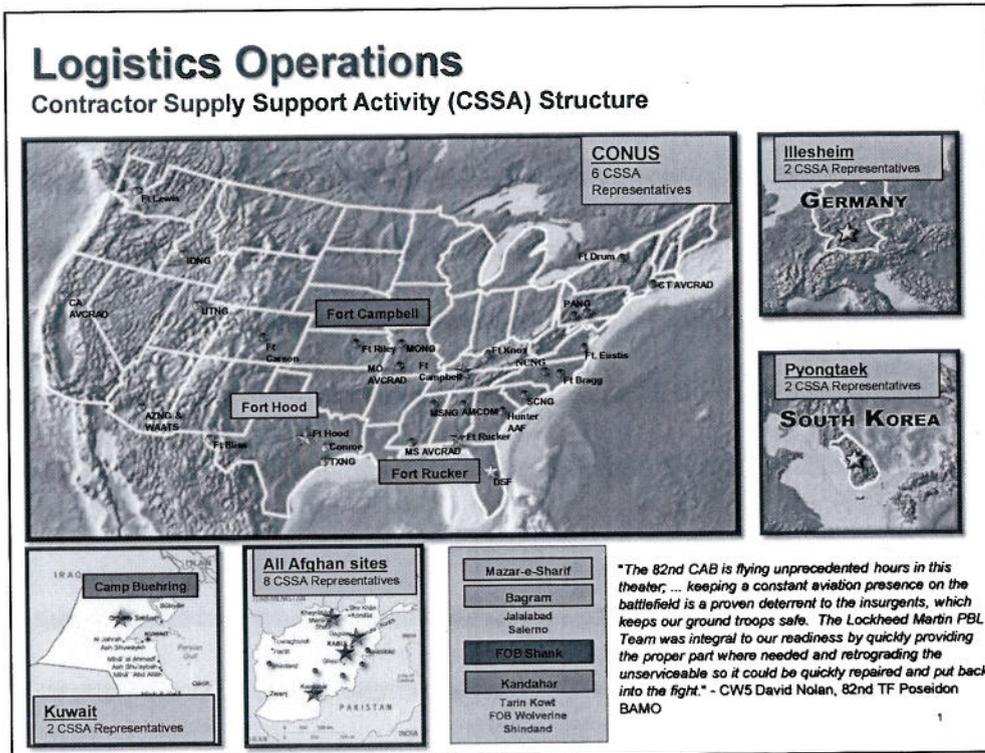


Figure 2 – PBL Supply Availability Performance Metric

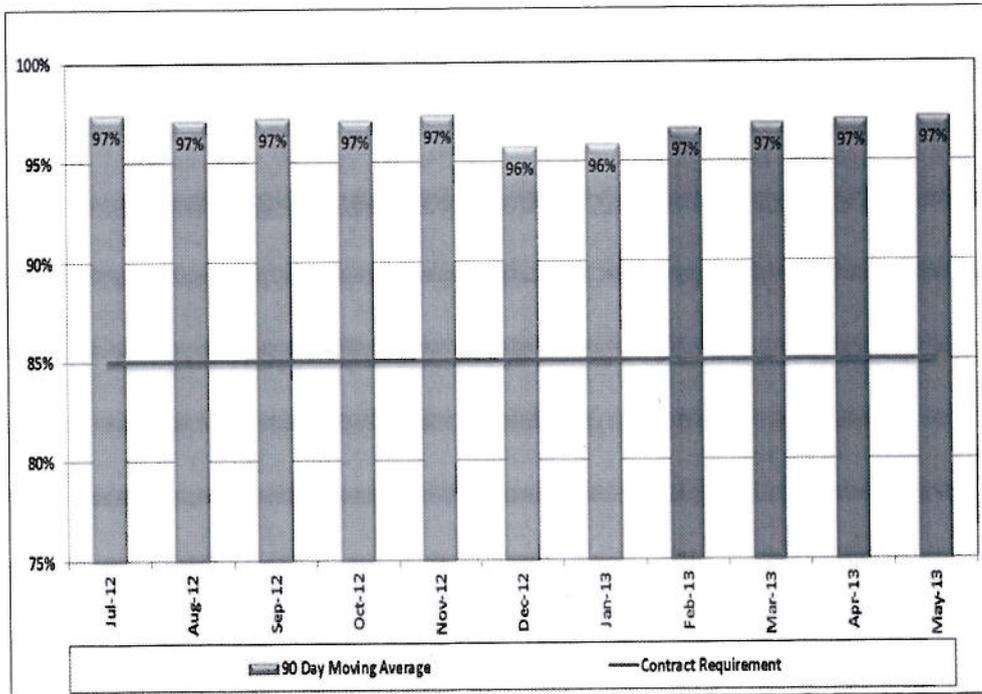


Figure 3 – Increased Mean Time Between Failures (MTBF)

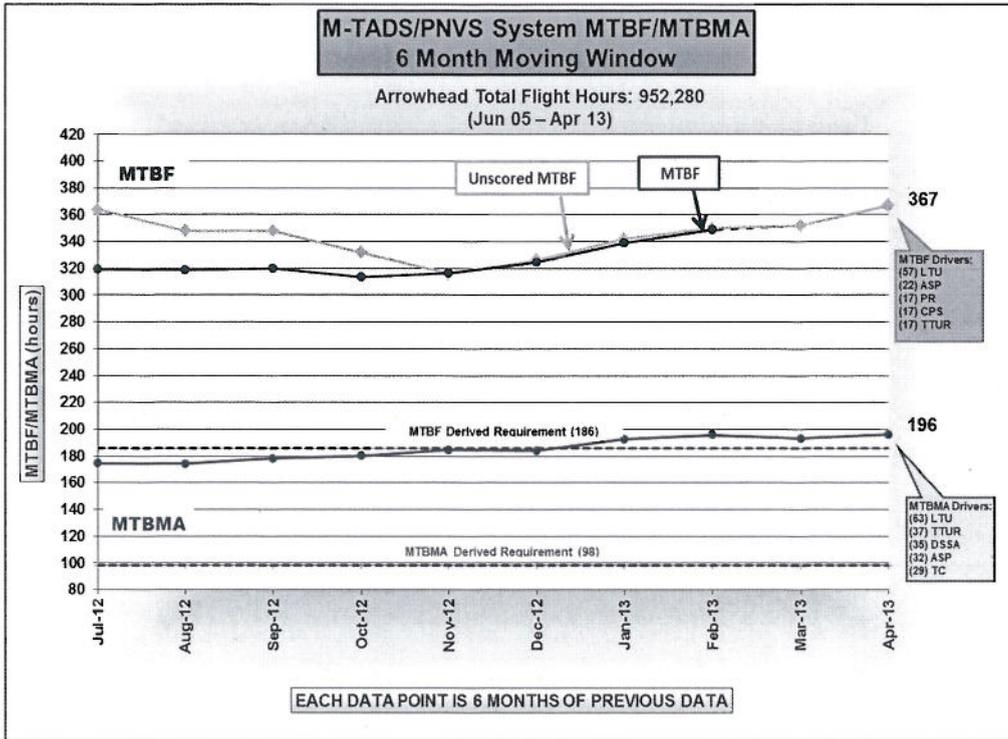


Figure 4 – Operating and Support Cost Reduction

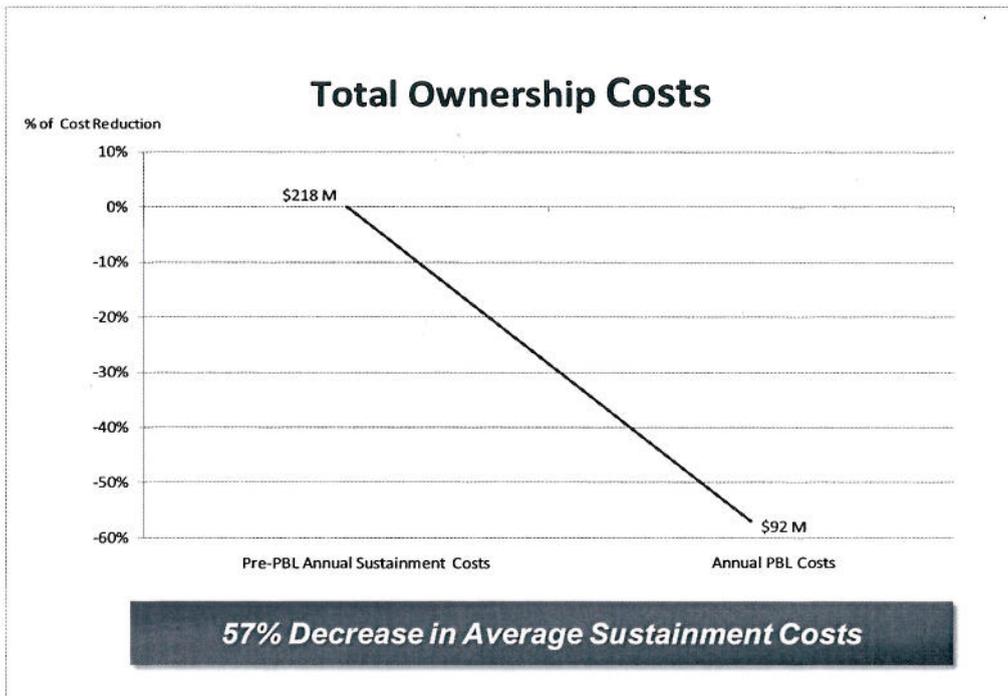


Figure 5 – Public-Private Partnership-Letterkenny

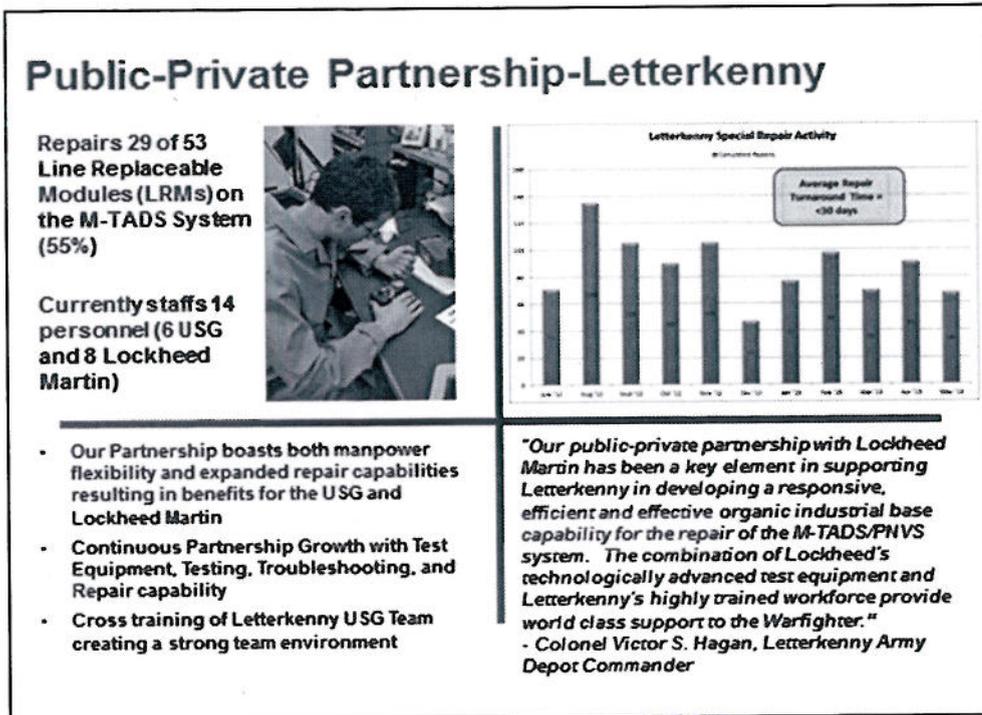
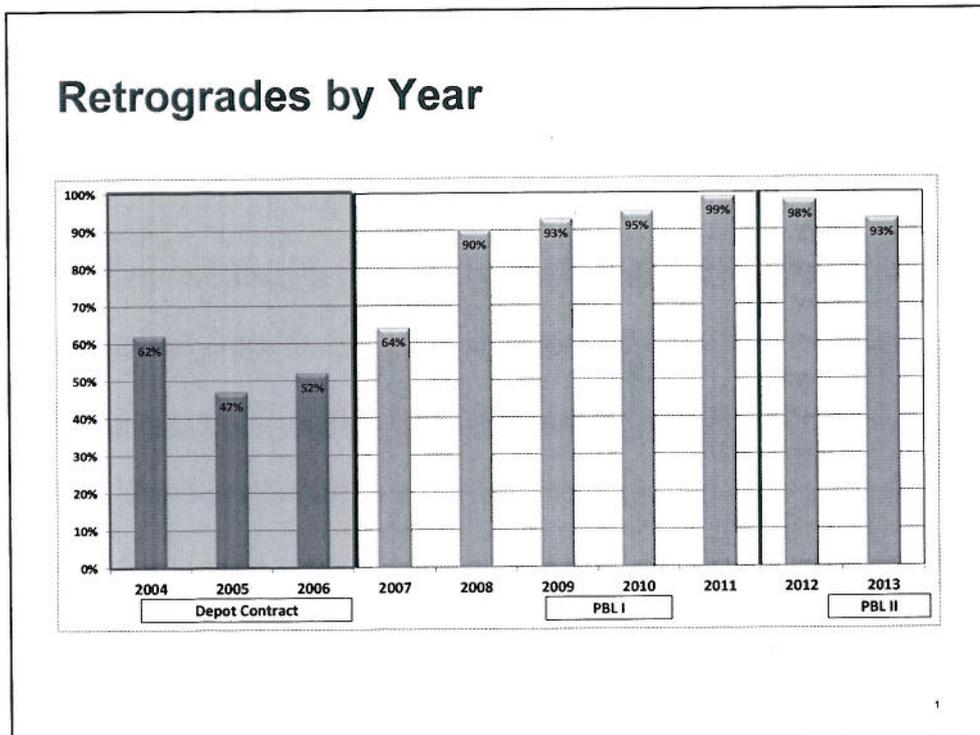


Figure 6 – Retrograde Improvements



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Section 4

Achievements

The AH-64 Sensors Performance Based Logistics (PBL) contract with Lockheed Martin (LM) supports the Modernized TADS/PNVS (M-TADS/PNVS) system on the AH-64 Apache helicopter. The teamwork between the Soldier, the United States Government, and LM on this Apache Sensors PBL contract has demonstrated a comprehensive solution to provide the Soldier 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 70% above the Apache Sensors derived requirement resulting in a cost avoidance of over \$18.9M; (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 55% 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 91 obsolescence cases resulting in a \$18.7M 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 Soldier. Apache Sensors PBL is a success story in Soldier support as it is extremely affordable, flexible, and provides the Soldier the critical assets wherever and whenever needed.