

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

**Section 2**

**Summary of Criteria Accomplishments**

**Improvements in Warfighter-Based Capabilities and Outcomes**

**Mission Success: The Advanced Mission Computer/Mission System Computer (AMC/MSC)**

Performance Based Logistics (PBL) is a highly successful program providing superior, cost-wise support to the Fleet since 2008. The current firm-fixed price (FFP) 5-year \$31.5M follow-on PBL contract was awarded by NAVSUP WSS to General Dynamics in May 2013. The AMC/MSC computers are part of the AN/AYQ-25(V) Advanced Mission Computer & Display (AMC&D) system and are composed of six (6) Weapons Replaceable Assemblies. The system provides state-of-the-art avionics computing, networking and display technology supporting precision fire control, multiple target/multiple simultaneous weapons support, enhanced sensors, digital imagery, and Network Centric Operations (NCO). The AMC/MSC is installed on F/A-18E/F, E/A-18G and AV-8B aircraft flown by the US Navy, Italy, and Spain. Under the PBL, General Dynamics assumes responsibility for an increased scope of effort compared to traditional, transactional support. These additional functions include obsolescence and configuration management, reliability and availability improvement, wholesale inventory management, requisition processing, transportation, quality assurance, and other logistics elements. General Dynamics applies best commercial practices and takes greater ownership for full life-cycle support of their products. The focus is on the procurement of a material availability outcome, i.e., Supply Response Time (SRT), vice procurement of a pre-determined number of repairs, parts, and supplies. During 2016, no F/A-18 or AV-8B sortie was missed due to unavailability of the AMC/MSC. General Dynamics pursues improvements, increases efficiencies, and identifies end of life components through the PBL arrangement. The Business Case

Analysis (BCA) ensures affordability and the FFP contract controls cost growth.

**Material Availability:** Prior to the PBL, material availability for the AMC/MSC was 37% with 74 backorders. The SRT material availability deliverable in the PBL requires General Dynamics to provide replacement assets to fleet customers within two (2) working days for high priority (Issue Priority Group, IPG 1) requirements and within eleven (11) days for low priority (IPG 2/3) requirements. Since contract award, General Dynamics has achieved 100% material availability [see Figure 1] and all backorders have been eliminated. 80 requisitions (28 IPG1; 61 IPG 2/3) were filled in the last six-month reporting period [see Figure 2 for totals since this PBL was awarded]. Total mission success and fleet readiness and interoperability is significantly enhanced through the PBL partnership effort between General Dynamics and NAVSUP WSS.

**Reliability:** The FFP nature of the PBL inherently incentivizes General Dynamics to improve reliability and reduce returns to the depot. The PBL contract also includes gain-sharing provisions if the contractor achieves significantly higher reliability levels. Reliability and gain sharing are tied to demand bands used to mitigate unplanned demand variation risk. Reliability is tracked for all six (6) AMC/MSC components and analysis of reliability trends is part of all performance reviews.

Contractual minimum Mean Time Between Corrective Maintenance Actions (MTBCMA) for the AMC is 2,772 hours; actual MTBCMA for current reporting period (48,944 total flight hours) is 3,415 hours. Contractual minimum MTBCMA for the MSC is 698 hours; actual MTBCMA for current reporting period (6,863 total flight hours) is 936 hours. Similar results have been sustained over hundreds of thousands of flight hours since contract inception.

#### **Sustainment Strategy Effectiveness/Efficiency**

**Operating and Support Cost Reduction:** The NAVSUP WSS BCA affordability analysis identified \$6.8M in cost avoidance when the PBL was renewed in May 2013. The General Dynamics' proposal was also determined fair and reasonable by the NAVSUP WSS Contracting Officer. The long-term nature of the PBL allows General Dynamics to meet affordability criteria

through reengineering of the support process. With a guaranteed business base, General Dynamics, as the Original Equipment Manufacturer (OEM), brings its best practices and in-depth knowledge of the AMC/MSB systems to sustainment support. The PBL incentivizes General Dynamics to make capital investments and support decisions that pay off over the long-term through improved parts support, investments in reliability, optimized depot processes, and decreased depot returns. General Dynamics has consistently and efficiently directed resources to optimize the performance outcome specified in the contract. Results are further enabled through efficient teaming and sharing of best practices leading to effective and affordable support. As mentioned above, gain sharing and demand band provisions are included in the PBL. FY16 reconciliation resulted in a \$259.8K refund to the Navy [see Figure 3 for the demand band/reliability relationship]. The improved reliabilities in the preceding section also result in lower maintenance man-hour costs as Fleet maintainers replace computers less often. The end result is substantially improved material availability and reliability for lower cost than would have been paid under traditional support.

**Public-Private Partnering:** Although depot touch labor is performed at General Dynamics, the PBL is a true partnership and collaboration between Government and Industry. Navy and General Dynamics team members meet twice a year at Program Management Reviews to analyze engineering, reliability, obsolescence and support issues. The semi-annual Performance Review Boards alternate locations to promote maximum yearly participation. Action items are assigned and tracked at each review. Effective coordination, communication, and sharing of best practices among all members of the team have assured the success of the program. Most importantly, the PBL strategy integrates into and enhances the use of the existing Navy logistics infrastructure. All support flows through the current Navy Integrated Supply System and is transparent to Fleet customers.

**Systems Engineering for Supportability Approach:** General Dynamics maintains timely and efficient support on the PBL and addresses all engineering, training assistance, or support issues as

they arise. Team focus is on Could Not Duplicate (CND) and No Fault Found (NFF) modes to reduce unnecessary Fleet returns. General Dynamics' employees also assist with field retrofits/upgrades at Fleet locations as required. General Dynamics maintains an "Alliance website" portal for NAVSUP WSS approved access that provides data on inventory, requisitions, carcass returns, and scraps.

**Logistics Footprint Reduction:** The AMC/MSC PBL has improved the supply chain through streamlined commercial engineering and supply chain efficiencies enabled through the contract structure. Improved material availability results in lower Fleet maintenance costs as cannibalization and cross-deck actions are reduced with less on-station support required. All wholesale inventories have been moved from Government storage to the custody of General Dynamics freeing up approximately 1,500 cubic feet in DLA warehouses with an annual savings of \$10K. In addition, significantly improved logistics response times and Repair Turn-around-Times through the PBL have reduced the wholesale inventory footprint.

**Obsolescence Management:** General Dynamics is responsible for obsolescence management on the program. This process includes a proactive approach to qualify new sources for obsolete parts, initiate lifetime buys, and recommend material/component design changes. General Dynamics also works closely with suppliers and sub-contractors such as Honeywell to resolve obsolescence issues. The PBL has funded numerous lifetime buys for components such as Xilinx XC2V1000, Micron MT48, Samsung SRAM, and E2V PCI Bridge Integrated Circuits. NAVSUP WSS, General Dynamics, and NAVAIR are closely collaborating on strategies to effectively identify and mitigate obsolescence issues that will occur over the next 20 years of post-production sustainment support. DMSMS provisions and structures will be addressed in all future AMC/MSC PBL renewal contracts.

**Arrangement Type/Period of Performance/Incentives:** The current AMC/MSC PBL utilizes a FFP contract vehicle and has a term of five years. This maximizes General Dynamics incentive to improve processes and performance. Years of actual cost and reliability data fully support the FFP

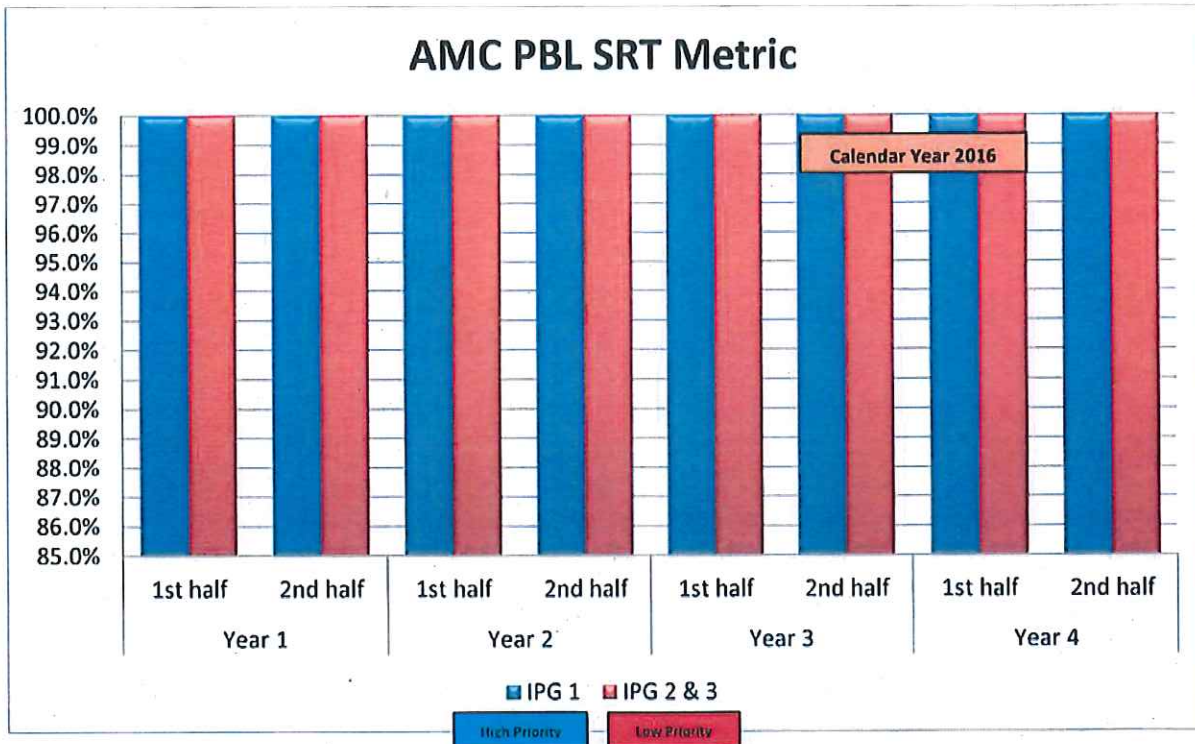
arrangement. The FFP nature of the PBL also controls cost growth by setting cost ceilings that prevent unbounded cost creep and growth. The five-year contract gives General Dynamics the opportunity to make long-term return on investment decisions, increasing innovation and productivity. PBL metrics are aligned with Fleet requirements, utilizing demand bands, which allow for cost adjustments to meet changing operational requirements when warranted. PBL support is fully integrated into existing Navy supply system architecture and transparently scales design across existing Navy infrastructure and expertise. The PBL is clearly structured to effectively and affordably meet Fleet requirements and incorporates the desired outcomes of DoD Acquisition Reform and Better Buying Power guidance.

A follow-on PBL to the current PBL, which expires in May 2018, is now in work; it will be a FFP contract with a 5-year base with one 5-year option. The NAVSUP WSS, NAVAIR, and General Dynamics team is currently in the early stages of the renewal, reviewing follow-on Statement of Work requirements and contractual Terms and Conditions. Additional components will be added to cover evolving configurations and design upgrades. Reliability and costs will be re-baselined in the renewal to garner improvements attained during the current period of performance.

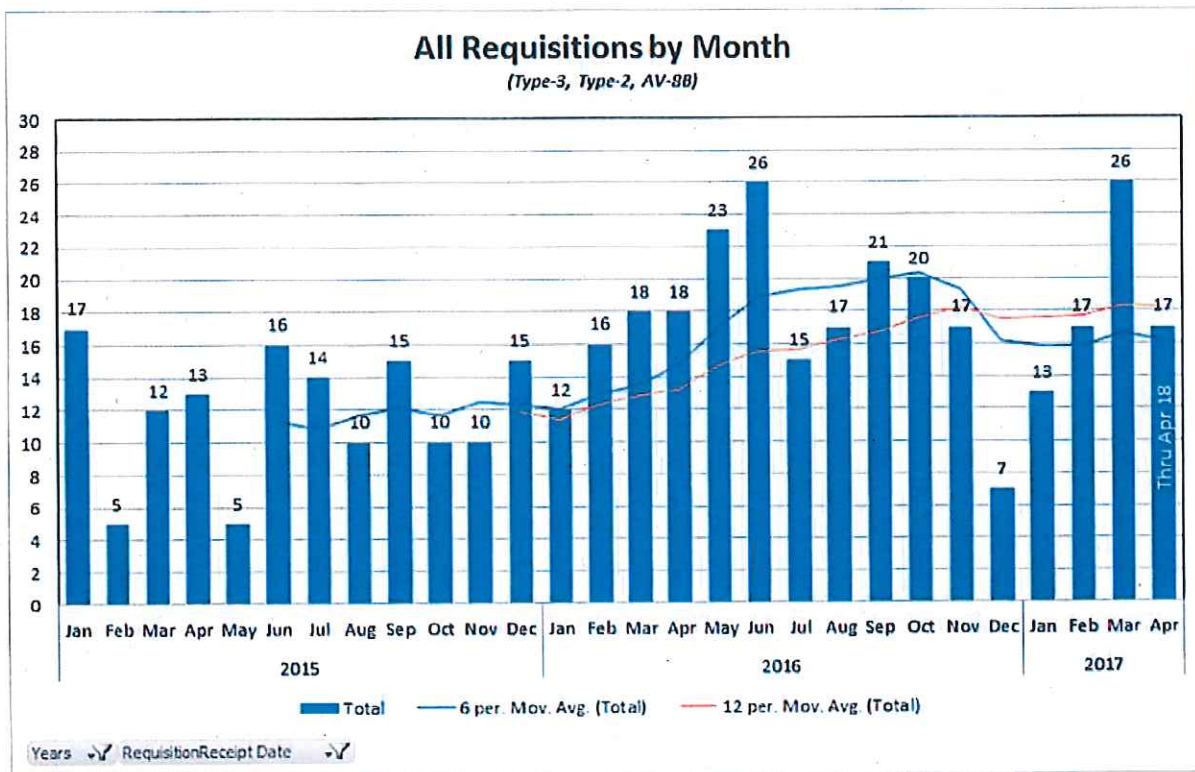
**Any Cost-Initiatives:** The NAVSUP WSS Pricefighters organization reviews every PBL proposal from a "should cost" perspective. The contractor's proposal estimate is examined, analyzed, and recreated using various cost estimating techniques to develop a cost model to capture all of the cost elements. Each of the contractor's Basis of Estimates (BOEs) is evaluated. Price Fighters recommendations are provided to the Contracting Officer and are used to prepare the Pre-Negotiation Business Clearance and to assist in contract negotiations. Pricefighter input on the AMC/MSB PBL facilitated cost analysis and supported the Contracting Officer's fair and reasonable determination and contract award.

**Figure 1: AMC/MSC Supply Response Time (SRT)**

Year 1 - May 2013 to April 2014; Year 2 - May 2014 to April 2015; Year 3 - May 2015 to April 2016; Year 4 - May 2016 to April 2017



**Figure 2: Total Requisitions filled, current PBL**



**Figure 3: Reliability Metric / Demand Band Relationship**

<b>Metric</b>		<b>Reliability</b>		
		Below	Nominal	Above
<b>Demand</b>	Below 19%	Possible \$ adjustment to Navy	Possible \$ adjustment to Navy	No Adjustments
	Nominal	No Adjustments	No Adjustments	No Adjustments
	Above 10%	No Adjustments	Possible \$ adjustment to GDAIS	Possible \$ adjustment to GDAIS

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**Section 4**

**Achievements**

The Advanced Mission Computer/Mission System Computer (AMC/MSC) Performance Based Logistics (PBL) is a highly successful program providing superior, cost-wise support to the Fleet since 2008. The current firm-fixed price (FFP) 5-year \$31.5M follow-on PBL contract was awarded by NAVSUP WSS to General Dynamics (GD) in May 2013. The AMC/MSC is installed on F/A-18E/F, E/A-18G and AV-8B aircraft flown by the US Navy, Italy, and Spain. GD assumes responsibility for an increased scope of effort compared to traditional, transactional support. GD responsibilities under the contract include logistics and inventory management, requirements determination, depot repair and spares production, sustainment engineering, and a reliability growth program. GD applies best commercial practices and takes greater ownership for full life-cycle support of their products. The NAVSUP WSS BCA affordability analysis identified \$6.8M in cost avoidance associated with this effort. Material availability has improved from 37% pre-PBL to a sustained 100% since contract award. The PBL incentivizes General Dynamics to make investments and support decisions that pay off over the long-term through improved parts support, investments in reliability, optimized depot processes, and decreased depot returns. General Dynamics manages all facets of the supply chain to ensure availability of spares to the warfighter. General Dynamics offers its best practices and in-depth knowledge of the AMC/MSC Computer system to sustainment support and integrates that knowledge within existing infrastructure in coordination with Navy members of the PBL team. The AMC/MSC PBL program provides the highest level of combat readiness and customer satisfaction. This PBL provides superlative cost-wise performance to the Fleet.