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

Improvements in Warfighter-Based Capabilities and Outcomes

Mission Success: The H-53E Performance Based Logistics (PBL) contract was awarded to Sikorsky Aircraft by NAVSUP Weapon Systems Support (NAVSUP WSS) in Feb 2006 for $219.2M. The contract has a 10 year period of performance with a 5-year base and one 5-year option. Sikorsky is responsible for managing the overhaul, repair and material support of ten H-53E aircraft components [See Figure 1] to fulfill the supply demands of United States Navy and Marine Corps customers. The 10 components are flight critical. Supply response time must meet or exceed an 85% fill rate for all requisitions received in a calendar year and must be filled within the delivery timeframe specified in the contract. Sikorsky must eliminate all component backorders, providing "just in time" supply responsiveness, availability improvement, and reliability and obsolescence management while reducing life-cycle costs of the H-53E. The PBL strategy provides Sikorsky with the necessary responsibility and resources to control, forecast, procure and schedule material ahead of time to coincide with and enhance component Repair Turn-around Times (RTATs) to meet the operational demand of the H-53E fleet. H-53E mission readiness is maximized through unfailing availability of the 10 critical components covered by the PBL.

Material Availability: The 10 H-53E components are used in the present fleet of 179 H-53E aircraft. This fleet has averaged approximately 39,000 flight hours per year from 2007 – 2013. Prior to PBL, material availability for the 10 components was 47%; the program was challenged with significant backorders and a long list of components that were awaiting parts at the depot. Since Jan 2007, the H-53E PBL has averaged a 96.1% fill rate for all Fleet requirements and backorders have been eliminated. Over 3,100 Fleet requisitions have been filled since PBL inception [see Figure 2 for CY13 data].

Material Reliability: The firm-fixed price (FFP) nature of the PBL inherently incentivizes Sikorsky to improve reliability and reduce returns to the depot. Sikorsky brings the value of the an Original Equipment Manufacturer to the PBL via its rigorous supplier qualification process which ensures parts are manufactured right the first time (and every time) to the original design specifications. The partnership collaboration between Sikorsky and Fleet Readiness Center East (FRCE) brings government and industry best practices and expertise together to improve rotary wing reliability and safety. Best safety practices and training programs are shared between the partners. Artisans are trained to the highest standards prior to working independently on the product. Government and Sikorsky engineers are both resident at the depot and are available to address issues and initiate corrective action as required. Quality Assurance personnel perform detailed inspections throughout the entire overhaul/repair process, ensuring problem-free components are delivered to the customer. Over the past 24 months, Average Quarterly Demand has decreased by the following amounts for the components listed: Tail Gearbox – down by 10; Accessory Gearbox – down by 6; L/H Nose Gearbox – down by 5; R/H Nose Gearbox – down by 7; Swashplate – down by 9. Configuration changes driving these reductions include seal, bushing, and plating redesign, bearing replacement, swash plate modifications, and enhanced corrosion protection. An innovative concept now in work is a called Cold Spray Deposition. This technology attaches specific metallic particulates to component housings by ballistic impingement at supersonic velocities, forming a coating that enhances durability.

Sustainment Strategy Effectiveness/Efficiency

Operating & Support Cost Reduction: The NAVSUP WSS Business Case Analysis (BCA) documents savings of $20.2M over the ten years of the contract. Sikorsky's proposal both met BCA affordability criteria and was determined fair and reasonable by the NAVSUP WSS Contracting Officer. The analysis results in a direct $20.2M reduction to the Fleet Flying Hour Program (FHP) budget over the period of performance… true "hard" savings. The long-term nature of the PBL allows Sikorsky to meet affordability criteria by enabling a reengineering of the support process. With a guaranteed business base, Sikorsky

brings its best practices and in-depth knowledge of the H-53E to sustainment support. The FFP contract incentivizes Sikorsky 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. Sikorsky quickly and efficiently directs resources where required to deliver the performance outcome specified in the contract. The bottom line is that the Navy experiences truly significant improvements in support for less cost than would have been paid under traditional support. In addition, once testing is complete, annual savings from Cold Spray process cited in the section above are expected to reduce annual component repair costs by $1M per year.

Alignment of Arrangement Type/Period of Performance/Incentives with the Requirements:

The current PBL is FFP for 10-years with a 5-year base and one 5-year option. The contract type and period of performance maximize Sikorsky's incentive to improve processes and performance. Years of actual cost and reliability data are available to fully support the FFP arrangement. The FFP nature of the PBL also controls cost growth. The 10-year commitment incentivizes Sikorsky to make long-term return on investment decisions increasing innovation and productivity. PBL metrics are aligned with Fleet requirements; flying hour bands (+/- 5%) allow for cost adjustments required to meet changing operational requirements. PBL support is fully integrated into the existing Navy Supply System; the PBL structure maximizes use of and maintains 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. The follow-on PBL to the current contract is now in work and is also planned to be FFP with a 5-year period of performance. Reliability and costs will be re-baselined in the renewal to garner improvements attained during the current period of performance.

Public-Private Partnering: The H-53E PBL is a partnership between Sikorsky and FRCE. A Commercial Services Agreement (CSA) was executed between Sikorsky and FRCE to enable the partnership and provide support to the PBL. Under the terms of the CSA, Sikorsky is responsible for providing funding, carcasses, repair parts, technical support, and transportation to the FRC. In past year,

component monthly RTATs at FRCE have been as low as 53 days, well below pre-PBL times of 120 days or higher. FRCE provides supervision, labor, facilities, and equipment for depot repair of H-53E components. Existing organic capability and artisan expertise are incorporated into program strategy. This approach not only complies with Title 10 requirements but also enhances the repair and overhaul process. The partnership facilitates improvements in both capability and capacity at the depot. Sharing of technology, best practices and concepts for product and process improvements are enabled. The relationship is a true teaming and blends state of the art manufacturing processes and innovative repair strategies using highly experienced artisans.

The partnership has also facilitated the offload of additional repair work from Sikorsky to FRCE. Sikorsky has moved additional work to FRCE under the authority granted in the CSA. The associated work has included repair and testing of fire bottles, test and check of various H-53E transmissions, repair of H-60 main rotor blades, main rotor blade dynamic (whirl tower) testing, repair of H-53E transmission housings, testing of main landing gear drag struts and flight trainer modification of a UH-3H to a VH-3D aircraft on behalf of HMX-1 Executive Flight Detachment training requirements.

Systems Engineering Approach: This PBL contract increases value to the customer through added proficiency and expertise gained though collaboration between industry and their government counterparts. The collaboration forms the foundation for sharing technical data and expertise, enhanced safety awareness and solutions, and the introduction of best practices from both industry and government aimed at providing a constant dialog for continuous improvement and sharing of lessons learned. Sikorsky has technical representatives co-located at the majority of fleet operator locations. These representatives participate in a cost avoidance program that is focused on maximizing "time on wing" for all H-53E helicopter components. Should a problem occur on an H-53E helicopter component, detail parts replacement or repair can occur "on wing" foregoing the need for removal and shipping to the depot. Under the PBL, material is supplied to support these local repairs.

The H-53E PBL Team has successfully dealt with configuration changes affecting 40% of covered components. Significant modifications have been made to Dampers, Nose Gear Boxes, Swashplates, Tail Gear Boxes, and other components to increase reliability, reduce corrosion, and eliminate leaks. Some changes were driven by three dynamic component bulletins resulting in transitions and changes in the supplier base, bills of material, and manufacturing lead times. All configuration, reliability, parts, and quality assurance issues are discussed in detail at regularly scheduled Navy/Sikorsky performance reviews. This critical teaming approach allows for seamless, continually improved Fleet support.

Footprint Reduction: The H-53E PBL has significantly improved the supply chain through streamlined engineering and supportability change incorporation, and the application of commercial support efficiencies and practices. This higher level of support results in lower Fleet maintenance costs because of improved reliability with less on-station support required. Significantly improved logistics response times and RTATs through the PBL have reduced wholesale inventory footprint. All Ready for Issue wholesale inventory has been moved from Government storage to contractor custody at the NEOVIA Logistics warehouse, Sikorsky's third party logistics provider…movement of this inventory frees up approximately 235K cubic feet in DLA warehouses during the PBL period of performance.

Obsolescence Management: Obsolescence management is a key to the H-53E PBL program. Sikorsky is responsible for managing obsolescence and diminishing manufacturing sources by proactively identifying and correcting potential issues through active monitoring of the financial and operational health of critical suppliers and working with suppliers on tooling issues and lifetime procurements. New suppliers have been developed and approved for numerous housings, gears, pinions, plates, and pistons used in end item repair. For example, SPX Precision for Tail Gearbox Center Housing; BMT Aerospace for Nose Gearbox Output Gear and Pinion; SPECTRUM for the Damper Piston Rod Assy; among many others. Ensuring piece part and component availability is accomplished through timely parts procurement and technical enhancements accomplished through Class II Engineering Change Proposals.

Figure 1

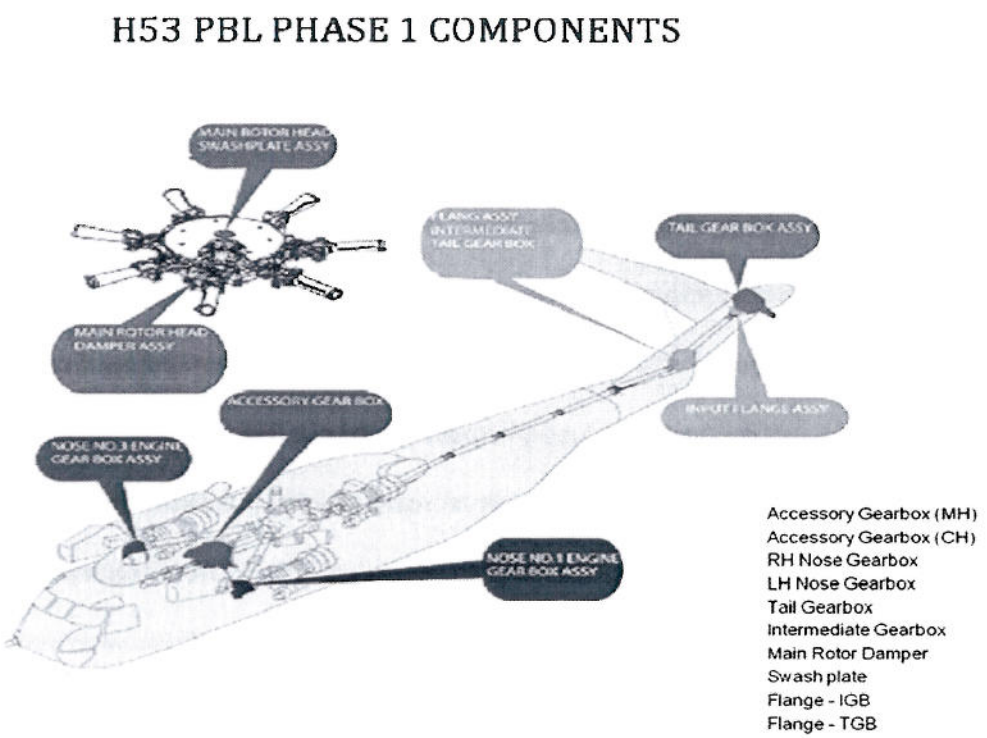
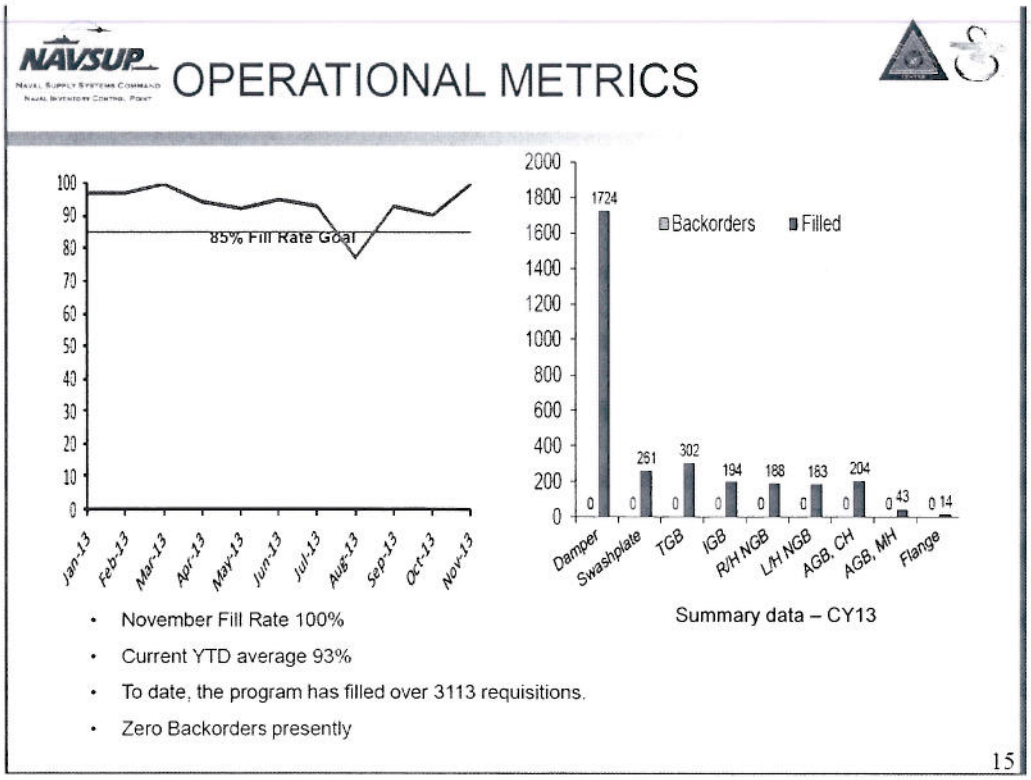


Figure 2: Performance Metrics (from 4 Dec 2013 Program Management Review brief)



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Section 4
Achievements

The H-53E Performance Based Logistics (PBL) contract was awarded to Sikorsky Aircraft by NAVSUP WSS in February 2006 for $219.2M. The contract has a ten (10) year period of performance (five-year base with one five-year option). The NAVSUP WSS Business Case Analysis (BCA) documents savings of $20.2M over the ten years of the contract. Sikorsky is responsible for managing the overhaul, repair and material support of ten (10) H-53E aircraft components utilized on the present fleet of 179 H-53E aircraft. The H-53 PBL Team has achieved remarkable success in meeting Fleet demand by filling over 3,100 requisitions in support of 270,000+ flight hours. This has been accomplished on an aircraft that has been out of production for over two decades with an aging supply chain that competes for capacity against the latest production aircraft requirements. The program to date has averaged a 96.1% on-time fill rate. These results are obtained though robust enterprise quality processes that mandate a continuous pursuit of performance excellence. The BCA ensures affordability and the FFP contract controls cost growth. The PBL partnership structure maximizes use of and maintains existing Navy infrastructure and expertise. The H-53E PBL provides significant cost-wise performance to the Fleet and addresses the desired outcomes of DoD Acquisition Reform and Better Buying Power guidance.