

**The Secretary of Defense Performance-Based Logistics Awards Program for
Excellence in Performance-Based Logistics
Summary of Criteria Accomplishments - Section 2**

Mission Success: The H-60 FLIR system enables the Navy H-60 helicopter to better perform the vital offensive littoral missions of anti-surface ship warfare and anti-ship surveillance & targeting. The H-60 FLIR provides the aircrew with the ability to detect, track, classify, identify and attack targets such as fast patrol boats and mine laying craft. The Navy need for this mission enhancement is best exemplified by the attack upon the USS Cole off the coast of Yemen in 2000, which killed 17 US Sailors and injured another 29. When the H-60 FLIR system was initially deployed poor system reliability and low system availability rendered the FLIR system logistically unsupportable. The FLIR system primary component was expected to have an operating time before failure of 500 hours, but in actuality was failing at less than 100 hours. In the 30 days immediately after 11 September 2001, the US Atlantic Fleet alone had 8 FLIR system failures among its 21 deployed H-60 helicopters. Under PBL both availability and reliability have dramatically improved enabling mission accomplishment, while resulting in a projected savings/cost avoidance between \$31M and \$42M.

Weapon System Availability: Prior to the PBL contract the H-60 FLIR performance was characterized by both low availability and reliability. The H-60 FLIR system is essential to the H-60 armed helo mission. The FLIR system is comprised of three components: Turret Unit (TU), Electronic Unit (EU), and Hand Control Unit (HCU). Poor FLIR system availability severely degraded Naval fleet readiness and mission capability. Prior to PBL, TU availability was 41%, EU availability was 17%, and HCU availability was 80%. However, the H-60 FLIR PBL is providing increased spares availability, guaranteed

reliability improvements, and a 65% improvement in logistics response time. Since PBL inception in Oct 2003 the H-60 FLIR components have maintained 100% availability, and achieved a 40% growth in system reliability improvement.

Life Cycle Cost Management: As support costs for H-60 FLIR components were escalating, reliability and availability were declining. An innovative, cost-effective approach to improve H-60 FLIR support within existing budget constraints was needed. The FLIR PBL, a FAR Part 15, ten year, (5 year base, with one 3 year option and one 2 year option), fixed price requirements, priced per flight hour contract valued at \$123M over 10 years was the answer. Along with contractual availability and reliability guarantees, the fixed price by flight hour contract incentivized Raytheon to improve reliability and reduce removals from the aircraft. Total savings/cost avoidance originally projected to be in excess of \$31M, is now estimated to exceed \$42M. Additionally, a gain sharing provision is included whereby the government will share in cost avoidance/savings in the event the reliability improvements are greater than 25% above the guaranteed minimum improvements negotiated in the contract for each FLIR system component.

Public-Private Partnering To satisfy Title 10 USC Core Logistic Capability requirements, the H-60 FLIR PBL program implemented a DoD public-private partnering agreement to establish new depot level repair capability. Under this arrangement, Raytheon signed a subcontract with NADEP Jacksonville (the ISO 9002 certified maintenance, engineering, and logistic support center for a variety of aircraft, aircraft engines and components, a DoD Center of Industrial Technology Excellence). Raytheon coordinated the successful transfer of FLIR repair maintenance from a commercial facility to a government depot. Raytheon, as

the prime contractor and original equipment manufacturer, assumed responsibility for supply chain management, configuration management, commercial technology insertion and total system performance, but subcontracted over 80% of the repair labor hours back to NADEP Jacksonville. This relationship stands on a performance based management approach utilizing their respective “best repair practices” to jointly establish a streamlined FLIR repair process, improve utilization of materials, reduce logistics cycle time, and decrease the total cost of ownership.

Systems Engineering Approach: The H-60 FLIR PBL contract introduces an innovative approach which integrates configuration management and information management systems. The FLIR PBL expands Class II configuration control authority to Raytheon, incentivizing them to introduce changes that increase reliability and reduce long-range costs. To implement this expanded authority Raytheon successfully deployed a web based Maintenance Management Information System (MMIS) to NADEP Jacksonville. MMIS allows for Class II changes to be implemented at the NADEP on a real time basis. In addition, reliability data collection is now performed at NADEP and at the Raytheon factory, simultaneously permitting rapid identification of reliability improvements. The streamlined configuration management process coupled with the deployment of MMIS at the Depot has allowed for rapid incorporation of numerous reliability improvements to the FLIR system. Depot work routers, repair introductions, material demands, and scheduling control is performed electronically via this web-based tool.

Footprint Reduction: During the most recent performance cycle, supply availability was 100% and reliability improved by 40%. This, along with the structure and efficiencies of the H-60 FLIR PBL have allowed for a 25% inventory reduction at the Depot and corresponding logistics footprint reduction since FY 2003. The deployment of MMIS to NADEP has

eliminated the need for manuals as artisans have web based access to manuals and rework procedures. In addition, NAVICP has total asset visibility throughout the PBL Supply Chain.

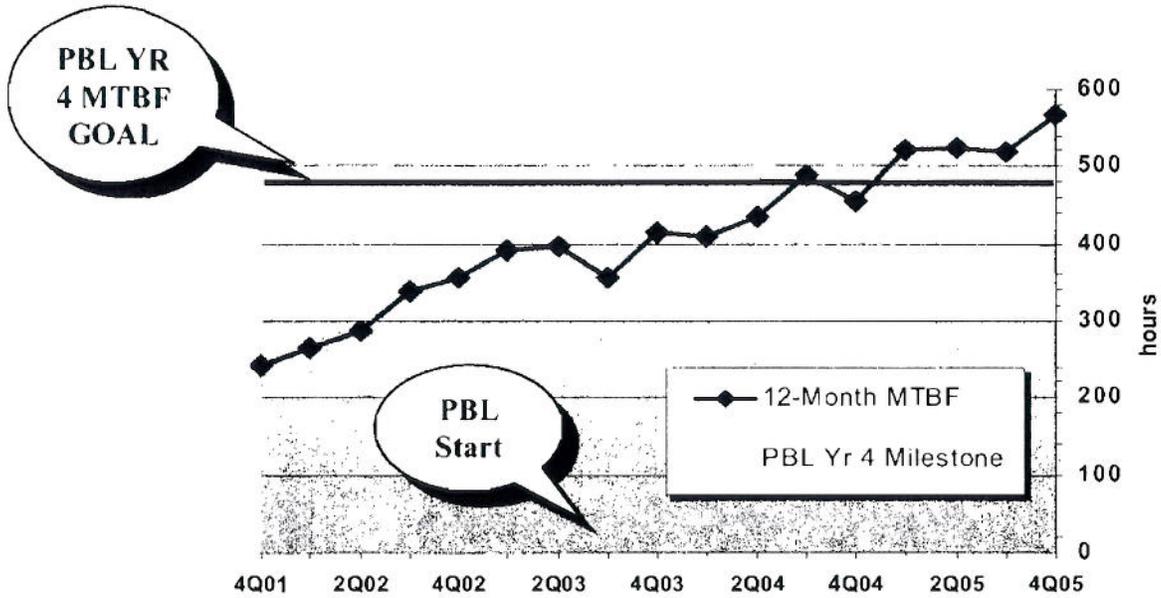
Obsolescence Management: Raytheon is contractually obligated to mitigate obsolescence issues at no additional cost in order to meet performance metrics. Raytheon's obsolescence management process includes a proactive approach to qualify new sources for obsolete parts, initiate lifetime buys, and recommend material/component design changes. Expanded Class II Engineering Change Proposal (ECP) authority allows Raytheon to quickly implement changes. Since contract award Raytheon has initiated eight Class II ECPs to implement reliability improvements.

Reliability, Maintainability, and Supportability Improvements: Contractual reliability improvement guarantees and a firm fixed price by flight hour contract incentivize Raytheon to improve reliability, maintainability, and supportability to maximize profit. Since the FLIR PBL award, 10 improvements to the FLIR Turret Unit (TU) have been introduced to the fleet via reliability improvement kits. FLIR components processed to date are remaining on wing longer, significantly reducing the fleet maintenance burden. The contract established a required Mean Time Between Failures (MTBF) of 490 hours by the end of year 4 for the TU, and a MTBF of 1,900 hours for the Electronics Unit (EU). Both components exceeded this contract requirement before the end of year 3. Raytheon deploys field engineering teams at the request of the fleet to provide training and assist maintainers in troubleshooting the organizational level repair process, thereby reducing depot level repairs. The field engineering teams working with fleet avionic technicians have identified root causes to many field induced failures, and implemented immediate corrective actions. As a result, fleet returns are less than the Navy projected. At the NADEP, the Raytheon/Depot team has

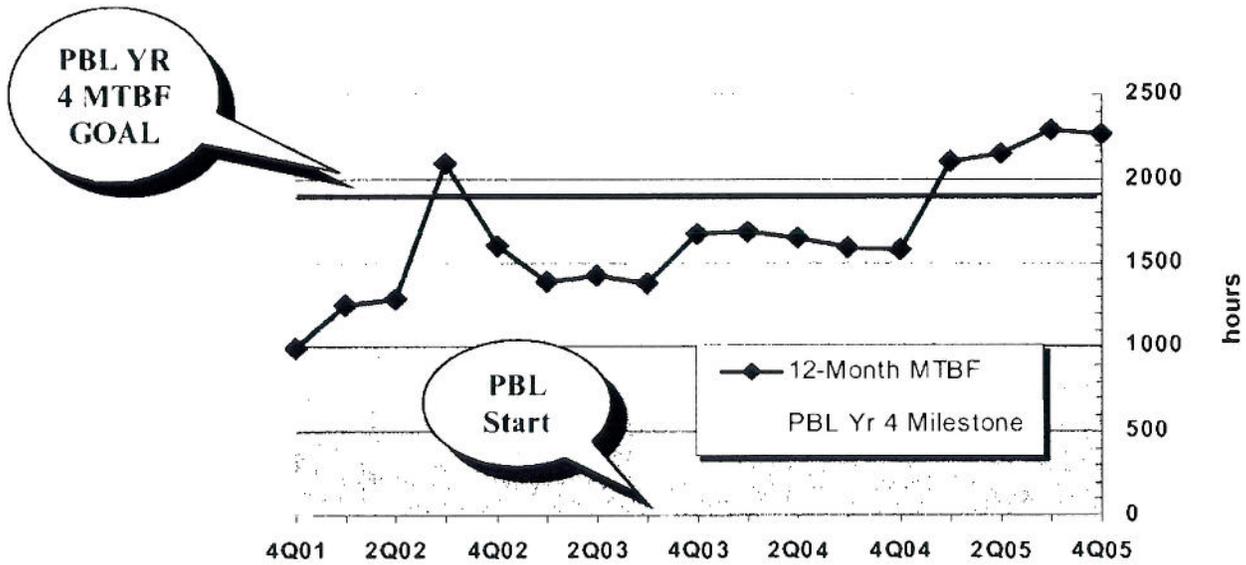
utilized their respective “best repair practices” to jointly establish a streamlined FLIR repair process, improve utilization of materials, and reduce logistics cycle time.

Life Cycle Cost

AAS-44 Turret exceeds contract MTBF goal in Year 3

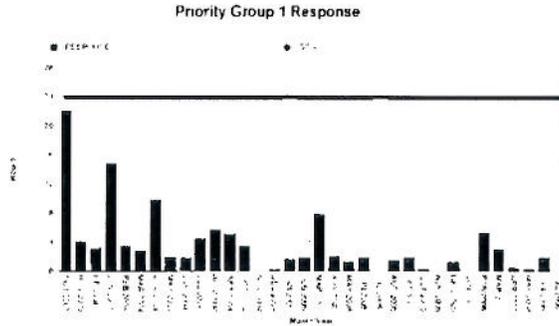


AAS-44 Electronics Unit exceeds contract MTBF goal in Year 3

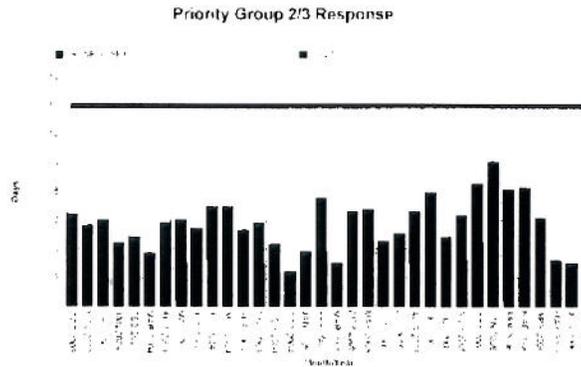


Weapon System Availability

- > High priority issue requests have out-performed the contract requirement of 24 hrs
- > High priority issue requests have declined and interval between requests has improved

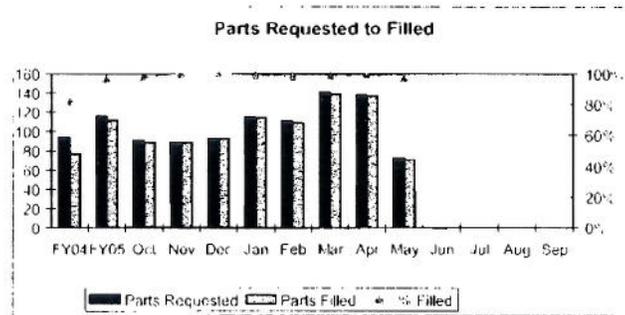


- > Stock replenishment issue request have out-performed the contract requirement of 14 days
- > Stock replenishment issue requests volume remains constant



- > NADEP Jacksonville material request are filled on demand
- > Longest open backorder for repair material was 7 days

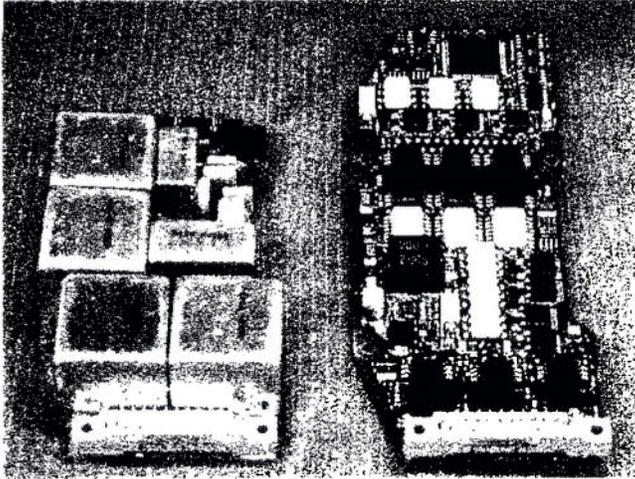
MATERIAL SUPPORT METRIC



	FY04	FY05	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Parts Req	94	116	91	89	93	115	111	141						
Parts Fill	77	112	85	89	93	114	109	139						

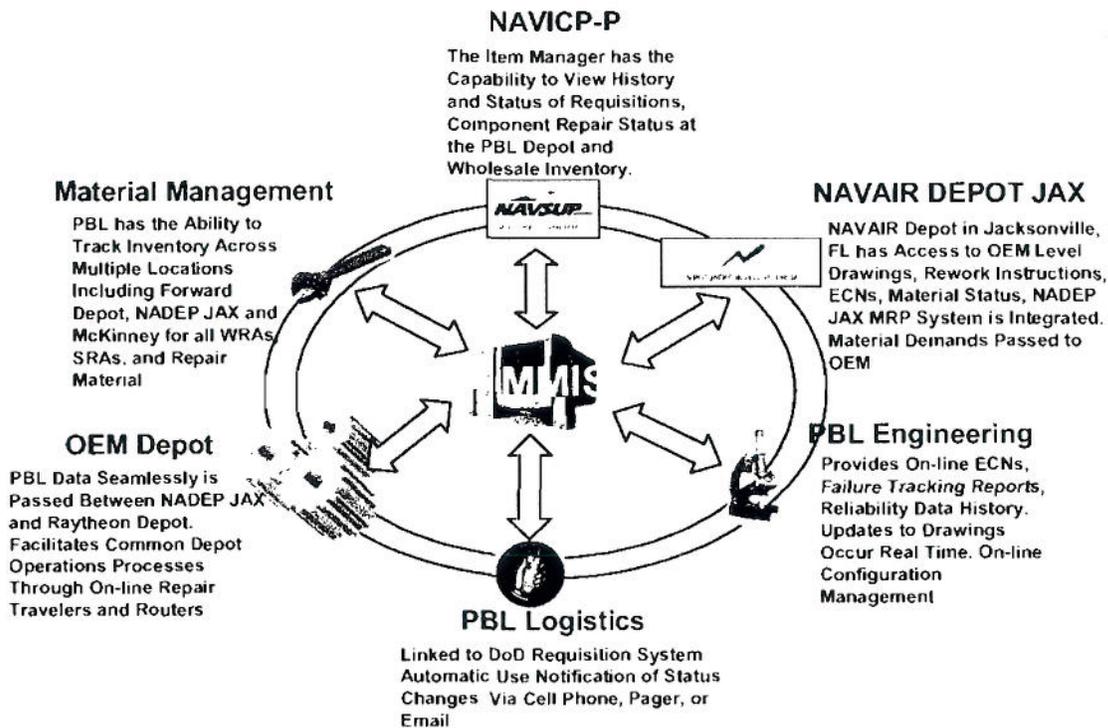
Technology Insertion

- > “Old” Power Relay CCA is shown on the left. This design allowed multiple SRA failures to occur during an over current condition.
- > “New” Power Relay CCA is shown on the right. This form fit function replacement CCA using new signal processing technology prevents damage to SRAs when an over current condition occurs.



Systems Engineering Approach

- > Connectivity diagram depicting the PBL system engineering approach to integration of maintenance. Management Information Systems.



**The Secretary of Defense Performance-Based Logistics Awards Program for
Excellence in Performance-Based Logistics
Achievements - Section 4**

Proposed Citation: The H-60 FLIR PBL team has set the benchmark for Performance Based Logistics at the sub-system level. The results of the team's efforts culminated in the award of a ten year contract valued at \$123M. Along with contractual availability and reliability guarantees, the fixed price by flight hour contract incentivizes Raytheon to improve reliability and reduce removals from the aircraft. The team's innovative approach to PBL created a collaborative partnership between the Navy and Raytheon which is dramatically reshaping the H-60 FLIR supply chain. This proactive approach is delivering an estimated \$31M-\$42M in savings resulting in reduced weapons system life cycle costs and 60% increase in availability and a 40% increase in reliability have dramatically improved combat readiness. A notable aspect of the contract is the public/private partnership established between Raytheon and NADEP Jacksonville. Use of their respective best practices in the repair process, is streamlining the repair process and resulting in reduced logistics cycle time. The H-60 FLIR system currently stands at its highest level of combat readiness and customer satisfaction since its introduction to the fleet. A significant portion of this record breaking performance can be directly attributed to the successful execution of the H-60 FLIR PBL contract. Since inception, this extremely innovative acquisition vehicle has performed magnificently. The H-60 FLIR operating community can now count on a level of logistics support for critical FLIR components that was not deemed possible when the system was first introduced. With the H-60 FLIR PBL in place, the warfighter can now enter the battlefield with full confidence that the FLIR system will be mission ready and primed to support on-going deployments against the Global War on Terrorism. The collective teaming efforts between Raytheon, NADEP Jacksonville and the Naval Inventory Control Point to bring H-60 FLIR under performance based support clearly contributed to this success.