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

Mission Success: The F-22 Performance Based Logistics (PBL) contract has continued to deliver world class capability to the warfighter and continuous performance improvements in Supply, Maintenance, and System Reliability, at significant value to the American taxpayer. The team utilized Better Buying Power practices to ensure a fair and reasonable sustainment contract was established between the government and contractors. The Raptor PBL team includes the F-22 System Program Office (program manager), contractors Lockheed Martin Aeronautics (LMA, Product Support Integrator), Boeing, Pratt and Whitney (P&W), all three Air Logistics Complexes (ALC), and Air Combat Command (ACC). The cost per flying hour for the F-22 has steadily declined, as Mission Capable Rates and Aircraft Availability Rates have continued to improve. The F-22 Fleet Mission Capable Rate set a new record high in 2013, averaging 71.1%, as did the Fleet Aircraft Availability Rate, which averaged 61.9%. In addition, Operational Availability was further enhanced by significant improvements in the Aircraft Abort Rate, which averaged 5.1% for the year, against a fleet goal of 6.5%. These phenomenal rates enabled the Raptor team to support the completion of 10 successful deployments and continue to support four ongoing deployments throughout the world. This year the Raptor PBL team set a new standard for contract sustainment by awarding the largest F-22 sustainment deal over multiple years valued over $2 billion with a fixed price incentive contract.

Materiel Availability: The F-22 saw significant program cost reductions in 2013 as a result of a joint commitment between the USAF and the contractor team. For example, spares costs declined by 40% from $43.8 million to $32.6 million, consumable costs decreased by 24%, and the overall costs for the contract was reduced by 4.2%, while overall performance for the weapon system continued to improve to all-time highs for the program. The program capitalized on enhancements to the Aircraft Sustainability Model and Advanced Planning and Scheduling Model. The result was the best overall performance metrics in the history of the program. The average Total Not Mission Capable Supply (TNMCS) Rate was the lowest on record, at 4.3%. Best in all fighter, bomber, mobility and trainer aircraft fleets! In addition, the program achieved the highest average Mission Capable (MICAP) Response Time Rate, at 92%, and the highest average Time Definite Delivery Rate in program history, at 96.7%, in 2013. The program also achieved the lowest Aircraft Cannibalization Rate ever recorded, at 2.4%. Bottom line, the Raptor PBL contract, which contracts Supply Support as a capability, achieved historic record breaking performance in 2013 for all key Supply performance metrics. This record breaking Supply performance played a major role in the program achieving the highest Aircraft Availability and Mission Capable Rates in the history of the program delivering the capability to aid the warfighter to secure the skies.

Materiel Reliability: Within the F-22 PBL contract, the SPO, Lockheed Martin, and Boeing have been able to achieve process improvements in Supply and Maintenance Support leading to a decade of continuous improvements in the overall performance of the weapon system. The team identified six bad actors in the past year that have resulted in a cost avoidance of $111,803 or about 2380 Maintenance Man Hours of unnecessary maintenance over the next 4 years. These parts would have remained in the supply chain and continued to drive cost had they not been identified as bad actors. In addition, due to software upgrades the aircraft has been able to reduce Manual Failure

Report Codes (FRC) by 50%, thus improving the Repeat/Recur Rate by 29.3%. By improving the overall reliability of the system the PBL team realized a 40% reduction in the maintenance abort rate thus ensuring mission success by launching effective mission sorties.

Ownership Cost Management: The F-22 was designed for supportability and self-sufficiency with a concerted focus on reduced logistics costs. The Lockheed Martin/Boeing partnership team provided overall savings to the government of $20 million for basic operations and maintenance activities in 2013. Additionally, LMA identified significant savings internally by reorganizing operations and personnel to form a new Integrated Fighter Group. This restructuring was an affordability initiative to integrate the Product Support Engineering functions of the F-16 and F-22 programs to include relocation of the entire F-22 Technical Support Center functions, capability and personnel, from Marietta, Georgia to Fort Worth, Texas.

Alignment of Arrangement Type/Period of Performance/Incentives with the Requirements: Under the F-22 PBL construct, Lockheed Martin and Boeing are given performance objectives, such as, an Aircraft Availability Target and/or a Total Not Mission Capable Supply Target, which are tied to a materiel budget. During the multiple year Fixed Price Incentive Firm contract the contractors have been incentivized to provide a certain level of support that will be rewarded appropriately. These areas involve meeting a certain aircraft availability level, providing documents on time and ensure the warfighter has the most capable aircraft for air dominance.

Public-Private Partnering (PPP): The F-22 has continued to make significant strides in expanding public private partnering opportunities by expanding the number of Depot Partnered repair operations at the three ALC's. 100% of depot delivery commitments for CY 2013 were met with 18 completions. Depots & CFTs accomplished over 900 organizational level TCTOs which equates to greater than a 62,000 hour savings for USAF maintainers resulting in a direct benefit to

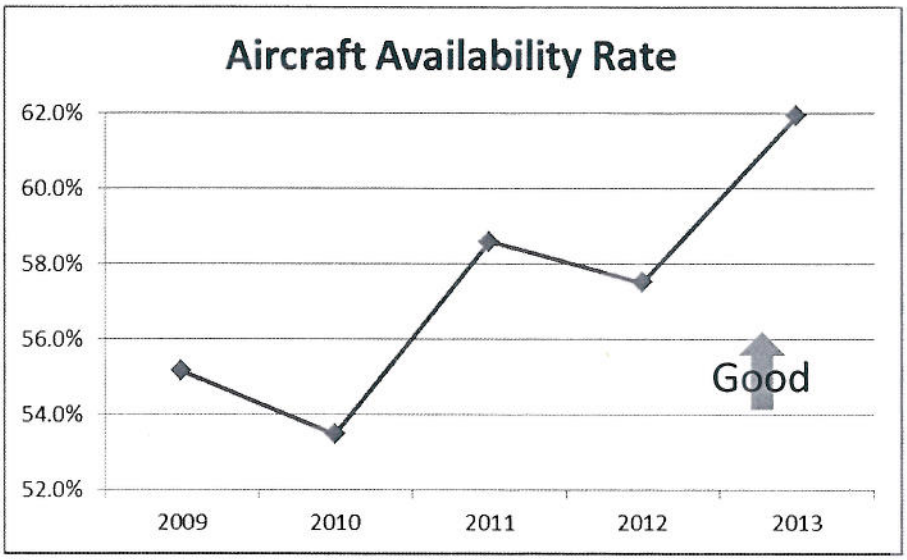
aircraft availability and operational capability. 2013 was a pivotal year with the completion of three major projects at Warner Robins ALC, to include the completion of Main Weapons Bay Door, Airframe Mounted Auxiliary Drive, Stores Management Modules, and Canopy at Ogden ALC and completion of the Vapor Cycle Controller at Oklahoma City ALC. These depot activations serve as role models of how to transition to PPP delivering government sources using a Performance Based Logistics strategy of not impacting fleet availability metrics or overall operating costs as evidenced in the charts below. Over the past two years, the number of F-22 repairs being performed at USAF Depots has increased by 142%. By the end 2013, these three USAF Depots had performed 3418 repairs valued at $23.8 million.

Systems Engineering (SE) Approach: The following engineering activities had a direct positive impact on Aircraft Availability: Engineering review and analysis led to optimizing near-term Packaged Maintenance Plan maintenance events to avoid Low-Observable panel restoration or performing risk analysis to accept overflying maintenance actions. This optimization allowed the team to eliminate 15 near-term maintenance days per aircraft and remove an additional 73 maintenance days per jet scheduled to occur prior to 3000 flight hours. To avoid repetitive Action Request submittals and maintenance delays, the Non-Destructive Inspection organic capability effort released 114 part-specific ultrasonic inspection procedures, as well as Level 1 & 2 inspection procedures, for Airframe & Landing Gear "Over G" events, Leading Edge Flap Hinge Moment Over Loads, and Landing Gear Over-speed events. This added capability provides maintenance crews the ability get jets Mission Capable at a faster rate. Engineering developed the cockpit corrosion mitigation plan, and released new field-level TOD instructions tied to existing seat removal timelines, saving the fleet an average of 19 maintenance days per affected aircraft during depot operations.

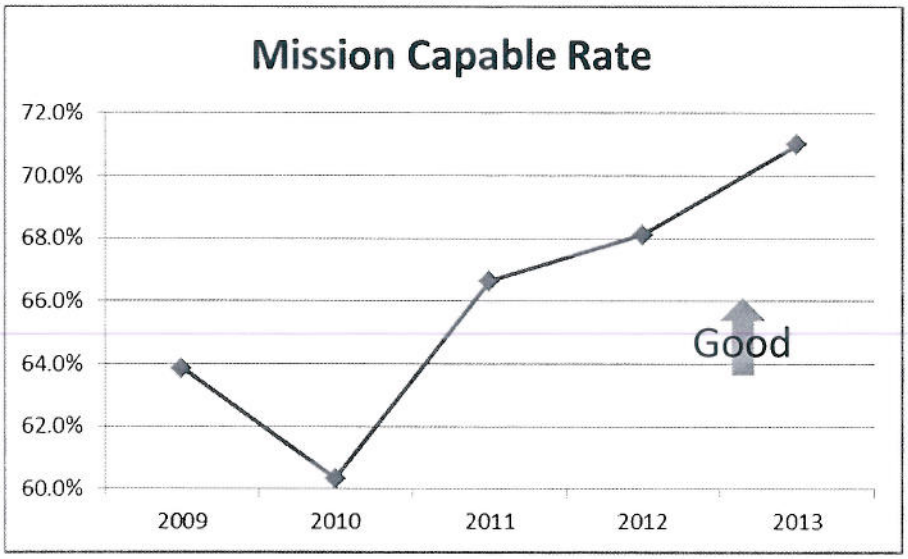
Footprint Reduction: One of the largest footprint reductions was the 95th Fighter Squadron moving from Holloman AFB to Tyndall AFB. This removed a significant amount of equipment, operations and maintenance personnel to consolidate aircraft from two locations to one. The planning for such a large and extensive operation took months to plan out and execute properly to reduce the risk degrading flying operations. Additionally, the footprint was significantly reduced by Lockheed Martin internally as they consolidated their own operations by forming the Integrated Fighter Group. These efforts allowed for the continual uninterrupted support to the warfighter. It provides real time customer reach back capability for both weapons systems, leveraging the skill and talent of highly experienced Product Support Engineers to provide world-class support to the warfighter 24/7.

Obsolescence Management: Lockheed Martin's and Boeing's Supply and Diminishing Manufacturing Sources (DMS) Teams continue to aggressively work emerging program obsolescence issues. The PBL team collaborates with Contractors and Sub-contractors in order to conduct trade studies to identify an optimum solution or decision path for mitigating emerging risks. One technique uses Weibull Analysis which identifies early wear out issues before they become serious Sustainment problems, and allows engineering teams to implement risk mitigation actions well in advance of the issues becoming significant problem. The F-22 supplier base is integrated into the DMS process, thus DMS issues are identified earlier, allowing more options for addressing emerging issues and managing the associated risk to the program. These proactive DMS processes have successfully mitigated an estimated $60 million in 2013 and over $810 million dollars since 2006. In addition, the DMS processes avoided lost time and missed material opportunities, and ensure aircraft are available to support the warfighter when needed.

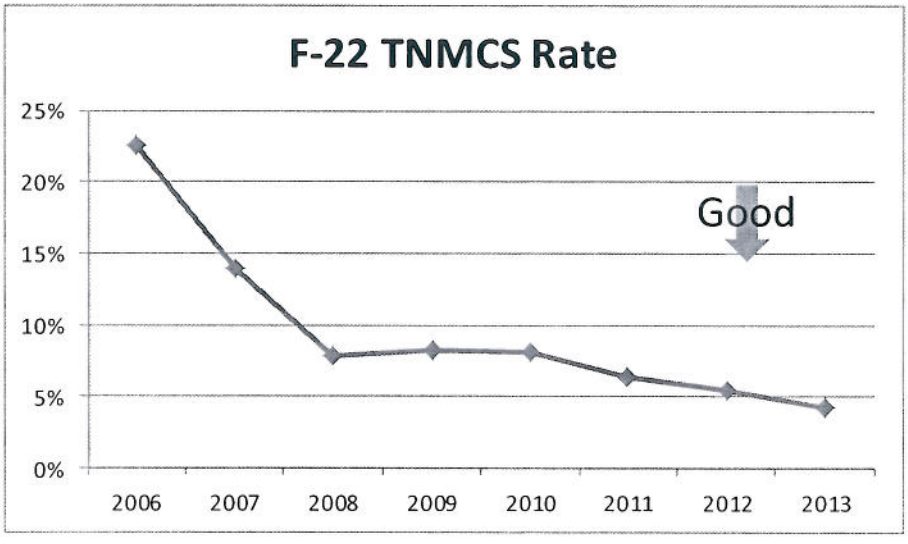
Aircraft Availability (Ao)



Mission Capable (MC) Rate

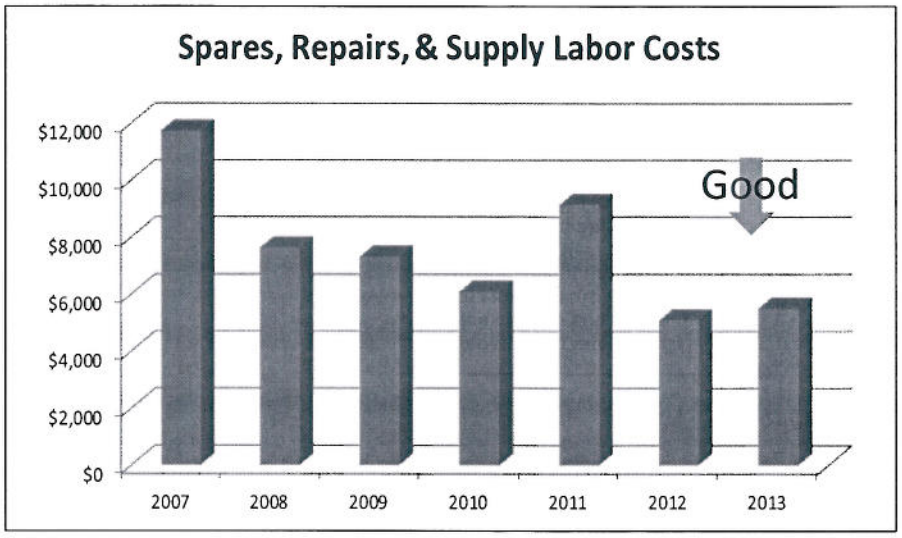


Total Not Mission Capable Supply (TNMCS)

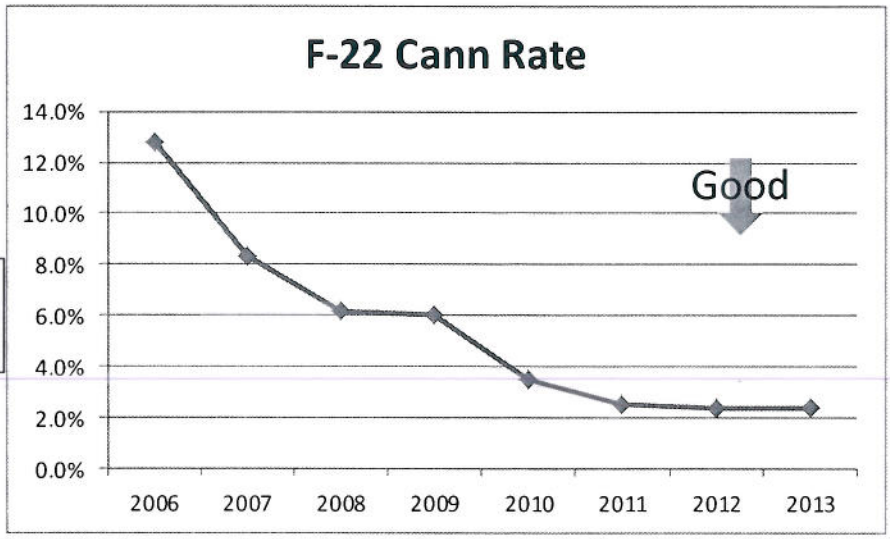


Ownership Cost per Flying Hour

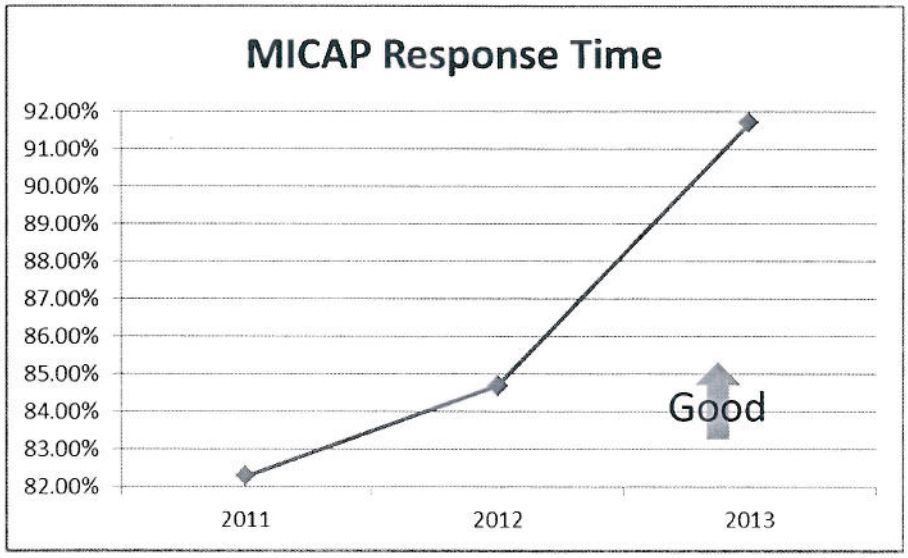
Note: 2011 spike due to 5 month fleet stand down. Slight rise in 2013 due to production line closure and shifts in overhead rates.



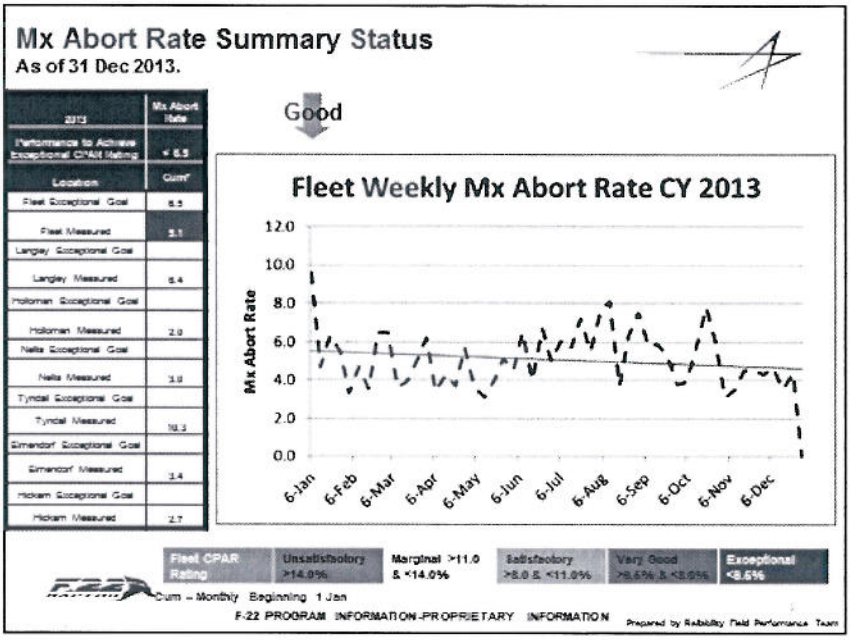
Aircraft Cann Rate



MICAP demand fills within 48 hours of user's need

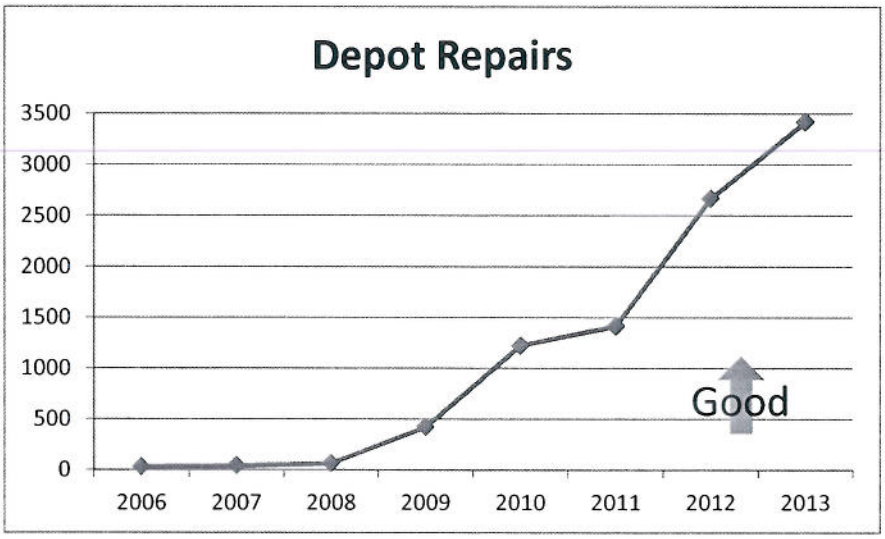


Maintenance Abort Rate



2013	Mx Abort Rate
Performance to Achieve Exceptional CPAR Rating	< 8.6
Location	Cum'
Fleet Exceptional Goal	8.6
Fleet Measured	8.1
Langley Exceptional Goal	
Langley Measured	8.4
Holloman Exceptional Goal	
Holloman Measured	2.0
Nellis Exceptional Goal	
Nellis Measured	3.0
Tyndal Exceptional Goal	
Tyndal Measured	10.3
Elmendorf Exceptional Goal	
Elmendorf Measured	3.4
Hickam Exceptional Goal	
Hickam Measured	2.7

Public- Private Partnering – Number of organic depot repairs



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Section 4

Achievements

The world's first fifth generation fighter program employed leading edge Performance Based Logistics strategies that proved instrumental in delivering war-winning capability to the F-22 Raptor fleet at significant value to the taxpayers. This world class PBL team includes the F-22 System Program Office, contractors Lockheed Martin Aeronautics, Boeing, Pratt and Whitney, USAF Air Logistics Complexes, and Air Combat Command. Lockheed Martin facilitates PBL execution as the weapon system Product Support Integrator. This dynamic, well-coordinated team successfully awarded the first F-22 Fixed Priced Incentive Firm multi-year Performance Based Logistics sustainment contract worth more than $2 billion for FY14 through FY17. The Lockheed Martin and Boeing partnership team provided overall savings to the government of $20 million for basic operations and maintenance activities in 2013 while reducing flying hour cost. In addition to the cost savings was the improvement of the F-22 Fleet Mission Capable Rate with a new record high in 2013, averaging 71.1%, as did the Fleet Aircraft Availability Rate, which averaged 61.9%. Furthermore, the Operational Availability was enhanced by significant improvements in the Aircraft Abort Rate, which averaged 5.1% for the year, against a fleet exceptional goal of 6.5%. The best part to these phenomenal rates was the increased worldwide support the Raptor team provided for the completion of 10 successful deployments and continual support of four ongoing deployments. The team continues to deliver impressive results in reducing cost of ownership and sustainment through innovative public-private partnering, while meeting all 50/50 and core requirements. Depot

Partnering has exponentially increased the PPP workloads over the last 5 years, increasing partnership contribution to 50/50 by nearly 800%. The average Total Not Mission Capable Supply (TNMCS) Rate was the lowest on record, at 4.3% against our contract incentive fee, and the Commander of Air Combat Command lauded the fact that F-22 Supply performance was the best in the command for fighter programs. The program has also improved the operational level capabilities in the field by converting multiple depot level tasks to O-level procedures including 1553 coupler repair which improves aircraft availability and reduces tech support center action requests. Additionally, through technical order data improvements the Raptor has realized a reduction in ground aborts due to hydraulic case drain filter delta pressure indicator extensions from 38 per year to 12 per year. This has also reduced the Manual Failure Report Codes by 50% and improved the Repeat/Recur Rate by 29.3%. It is due to these advancements in supply, material, and sustaining engineering that played a major role in the program achieving the highest Aircraft Availability and Mission Capable Rates in the history of the program delivering the capability to aid the warfighter in the continual domination of air superiority.

The fifth generation stealth fighter technologies make the Raptor untouchable in the skies and are only possible because of the efforts of the world-class team implementing an innovative PBL strategy delivering unrivaled warfighter capability – anytime, anywhere. FLY, FIGHT, WIN!