

**The Department of Defense Awards Program for
Excellence in Performance Based Logistics
Summary of Accomplishments – Section 2**

When Sacramento Air Logistics Center (SM-ALC) closed in 1995, Lockheed Martin Aeronautics-Palmdale (LM Aero-P) proposed how they could support the F-117 Program by assuming non-core government functions for a lower cost. Air Force senior leadership shelved other relocation options and redirected efforts towards the LM Aero-P proposal.

The Total System Support Partnership (TSSP) contract was awarded in FY99.

Under TSSP concept, LM Aero-P integrated the workload of the 180 other prime contractors and vendors, and took over the customer interface function with the 49th Fighter Wing. Today, LM Aero-P performs the role of an Air Logistics Center (ALC) and is responsible for the complete logistic support of the F-117 at the system level.

TSSP is a pioneer in Performance Based Logistics (PBL), incorporating what have now been defined as the major PBL elements. The TSSP contract includes operationally relevant metrics and focuses on minimizing cost through use of award fee and cost sharing. Although TSSP is a sole source contract, the strategy encourages competition at the subcontractor level. FY06 is the final year of the TSSP contract, completing the first phase of a very successful 8-year PBL partnership. TSSP II will be awarded in FY07, extending LM Aero-P support through anticipated retirement of the F-117 fleet.

Unit Operational Readiness Availability: Under the TSSP contract and incentivized with a 7 percent fee structure, LM Aero-P achieved results that put the 49th FW on solid footing to meet readiness goals (Figure 1), significantly improving their performance.

For example, fill-rates for Readiness Spares Packages consistently exceed the Air Force standard of 96 percent.

Weapons System Availability: LM Aero-P's performance has significantly increased response time in providing engineering dispositions and Mission Capable (MICAP) deliveries over like performance under support from SM-ALC. Pre-TSSP average response for SM-ALC in MICAPs was 80 hours and average response for engineering dispositions was at 190 hours. TSSP performance is 23.4 hours and 2.1 hours respectively. The outstanding response by LM Aero-P equates to one additional aircraft available per day to the 49th FW.

Mission Success: The combination of readiness support (through operationally relevant metrics), responsiveness, and logistics footprint reduction has provided the 49th FW a stable support structure that enables the warfighters to perform their combat mission with a high degree of success (Figure 2).

Government/Industry Teaming and Contracting Mechanisms: The TSSP approach reinforces the criticality of a strong government/industry team. At the start of the TSSP contract, the Air Force and LM Aero-P had already been working as a logistics team for over 20 years, with LM providing depot support, systems engineering and configuration management. TSSP expanded LM's role in supply chain management. This change in work split is transparent to the 49th FW in the day-to-day support process. The F-117 Systems Squadron (SS) at ASC retains inherent government tasks such as security, contracting, financial management, requirements determination and OSS&E. All aspects of the program are managed through structured government/contractor integrated product teams and working groups, which meet twice a year to address real-time support issues

and build the strategies to effectively sustain and modernize the F-117 fleet and associated equipment. These teams are chaired by the appropriate expert from either the F-177 SS or LM Aero-P. TSSP is a Cost Plus Incentive Fee (CPIF) contract with an award fee feature. The incentive fee ensures LM Aero-P meets or exceeds the key performance parameters identified by the warfighter for readiness support and depot quality. The award fee feature ensures customer satisfaction and the flow down of government contracting principles (such as competition) to the subcontractor level. It also rewards sound technical and program management efforts as well as customer satisfaction. To date, LM Aero-P has earned all incentive and award fees available through continued superior performance. Finally, a 50/50 cost share splits the savings/costs between the government and contractor for underruns/overruns. Knowing that savings to the government mean increased profit for LM Aero-P motivates the contractor to invest in process and product improvements. Because TSSP focuses on performance, we were able to greatly simplify the contract in structure and required deliverables. The basic TSSP contract was awarded for 5 years with a 3-year option, which was exercised in FY04. This 8-year partnership allowed LM Aero-P to negotiate long-term contracts with their vendors, greatly reducing costs (\$80 million savings) and supply risks.

Life-Cycle Cost Management: This revolutionary PBL initiative has exceeded the seven performance standards established by the warfighter (Figure 1), and saved the Air Force over \$217.5 million. As an OSD pilot program for Reduction in Total Ownership Cost, TSSP serves as a benchmark for other DoD and NATO weapon systems. Over the life of the contract, government manning has been reduced from 265 to 48 realizing a

savings of \$90 million. ACC and the F-117 SS adopted a stabilized funding arrangement that guarantees the contractor firm negotiated funds for each of the years of the contract in exchange for an additional \$80 million cost savings to the government. The cost/savings-sharing aspect of the TSSP contract motivated the contractor to implement several process improvements that yielded cost underruns every year of this contract. ACC's share of the underrun totaled \$47.5 million during the last 7 years. In most cases, ACC directed the Squadron to reinvest the underrun savings back into the platform to solve problems with vanishing vendors and obsolete parts (Figure 3). Cost growth in Operation and Maintenance (O&M) funding for the F-117 has been held to that of inflation and is significantly lower than other platforms (Figure 4).

Public-Private Partnering: Although LM Aero-P has total system-level sustainment responsibility for the F-117, overall support of the F-117 is truly a partnership between government and industry. LM manages and supplies 70 percent of F-117 parts, but 30 percent are provided by government sources including Air Logistics Centers and the Defense Logistics Agency. Depot maintenance of F-117's F404-GE-F1D2 engine is performed at the Naval Aircraft Engine Depot in Jacksonville, FL. The Depot Maintenance Interservice Support Agreement is managed by the F-117 SS. Through the extensive TSSP IPT structure, LM Aero-P assists the government in engine management and plays a key role in planning, forecasting, and sustaining the engine program. The F-117 program has enjoyed an average spares level of 12 engines (double the War Readiness Engine level) for the entire TSSP period of performance despite funding and technical set backs typical of any engine program.

Systems Engineering (SE) Approach: The TSSP team employs a robust SE process for addressing Operational, Safety, Suitability and Effectiveness (OSS&E) and Air Worthiness concerns, in meeting commitments to the warfighter, and assures sound recommendations for decision makers. TSSP levies the responsibilities of technical order (TO) content management, screening and investigation of product deficiencies, and engineering technical support to LM Aero-P in support of the 49th FW and 410th Combined Test Force. F-117 TOs have a 98 percent currency rating, one of the highest reported by AFMC. Since TSSP award, the program has not had a single deficiency report (DR) go delinquent and has closed each DR to the satisfaction of the user. Engineering technical support is amazingly responsive, minimizing aircraft and related system down time to one-third of the time typically seen on other programs.

Footprint Reduction: Under TSSP, LM Aero-P recommended and restructured their support to move the F-117 maintenance concept from three levels of maintenance to a 2-level maintenance concept. The change resulted in a 33 percent reduction in footprint, saving resource constrained airlift, by eliminating the need to forward locate an intermediate level repair capability for major avionics systems and components. Even though the 49th FW's intermediate capability had been eliminated from deployments, the wing enjoyed the best re-supply rates resulting in the highest fighter mission capable rates for the last two contingencies (Figure 2).

Obsolescence Management: LM Aero-P routinely monitors Government-Industry Data Exchange Program (GIDEP) and industry activity and actively solicits support information from over 180 vendors to assess obsolescence issues before they become serious problems for the F-117. Because of their efforts, the TSSP team has avoided

aircraft and system availability problems due to obsolescence and vanishing vendor circumstances. Over the TSSP period of performance, LM Aero-P has resolved obsolescence issues in several key systems; i.e. turret screen wire manufacturing for the targeting system, pilot probe tip manufacturing for the aircraft air data system, high temperature block absorber material sourcing for the exhaust system, components for the air data test set, and memory media for the moving map system to name only a few. The team has made prudent end-of-life buy decisions to bridge system upgrades and minimize investment fund requirements.

RM&S Improvements: Supported by our structured IPT process, TSSP enables LM Aero-P to determine the best approach for solving and recommending corrective actions to resolve Reliability, Maintainability and Supportability (RM&S) issues. Without additional funding or further governmental direction, LM Aero-P put in place new designs for multiple systems to resolve negative reliability trends. They have fielded minor modifications and necessary tooling to address field maintainability desires (Figure 5).



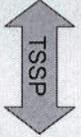
LMA-P Performance



U.S. AIR FORCE

Dominant Air Power: Design For Tomorrow...Deliver Today

PERFORMANCE AREAS	12 Month Moving Averages						
	NMCS	MICAP	RSP	Depot Quality	Depot Delivery	Delinquent DRs	WST Availability
Standard	5%	72 Hrs	96%	0-20	0 Days	1	99%
FY 97 (9 months)	4.0	61.7	98.7	20	N/A	0.1	99.81
FY 98	6.0	63.3	99.2	20	1.8	0.0	99.80
FY 99	2.6	36.8	98.9	20	0.0	0.0	99.77
FY 00	2.8	36.7	99.4	20	0.0	0.0	99.38
FY 01	2.2	30.3	99.2	20	0.0	0.0	99.44
FY 02	2.2	27.1	99.5	20	0.0	0.0	99.97
FY 03	1.4	18.8	99.3	20	0.0	0.0	99.97
FY 04	4.0	22.6	98.6	20	0.0	0.0	99.90
FY 05 thru May	3.4	24.0	98.5	20	0.0	0.0	99.93



Proven consistent performance through incentives

Figure 1

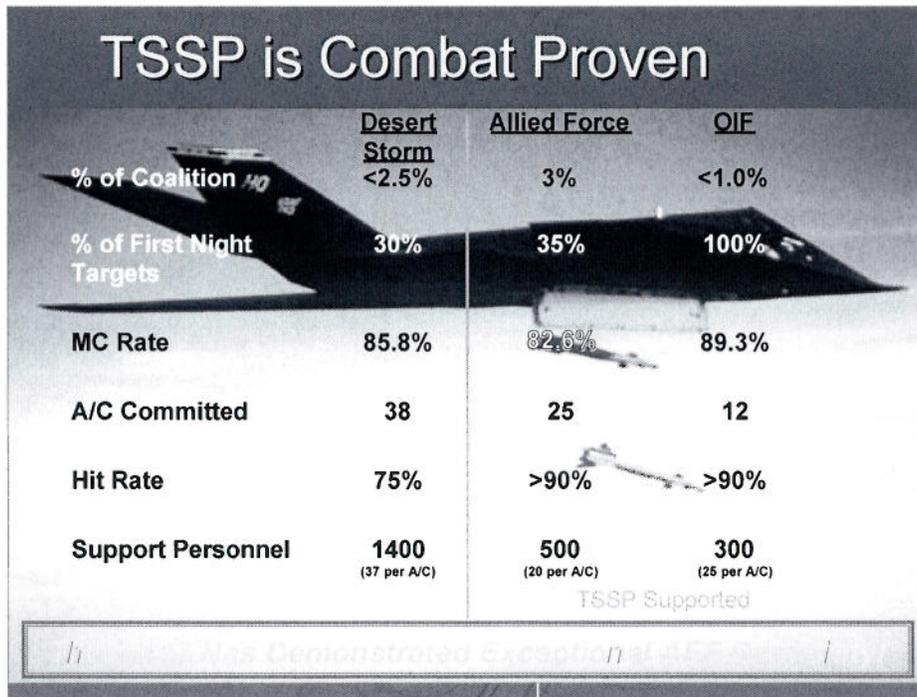


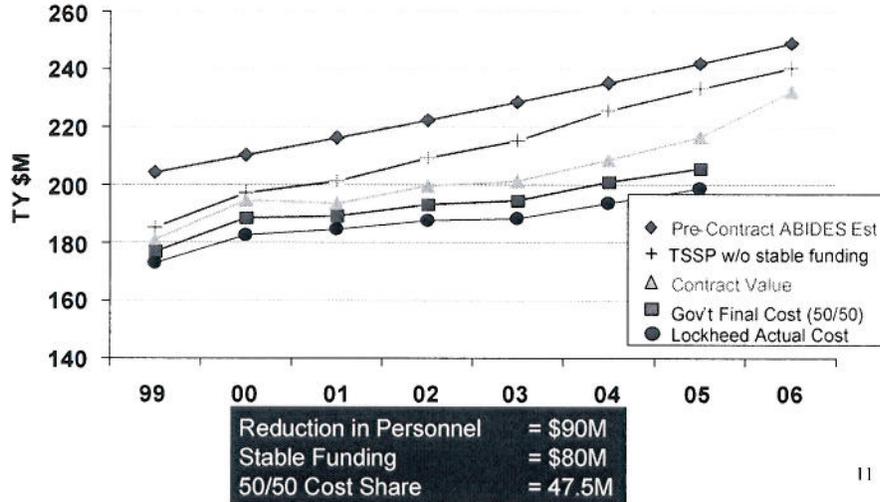
Figure 2



U.S. AIR FORCE

TSSP I Financial Results

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Figure 3



U.S. AIR FORCE

Cumulative O&M Cost Growth FY99 to FY06

Dominant Air Power: Design For Tomorrow...Deliver Today

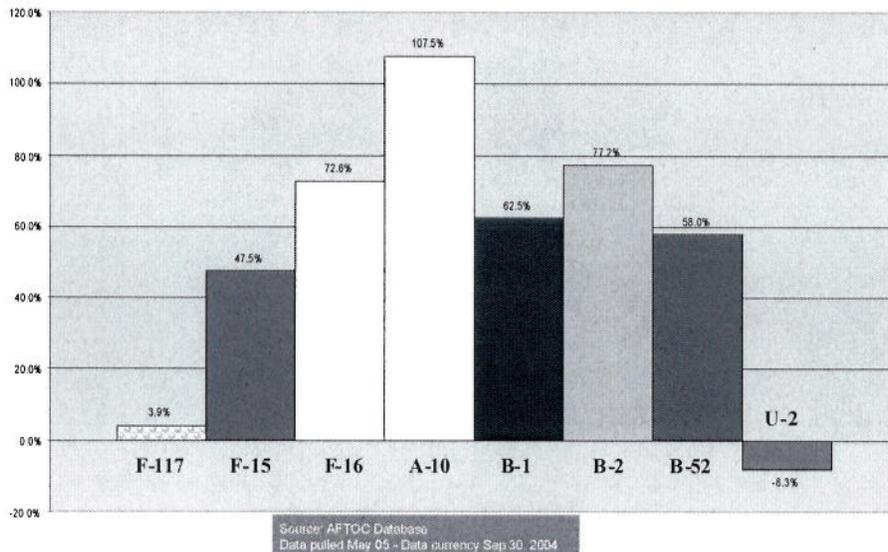


Figure 4

"The growth in operating cost for the F-117 over the last five years has been miniscule compared to increases for other similar aircraft. Whatever the folks at Holloman are doing....should be the envy of the Air Force."

White House Office of Management and Budget (OMB), visit to Holloman AFB - Oct 2001.

TSSP RM&S Projects



- **Reliability Improvements**
 - *C-197 Coating on Stages 7 & 8*
 - *Tail Hook Panel Improvement* SB# N-3635
 - *APU Bypass Door Actuator* SB# N-3637
 - *20D9000 Hot Edge Testing Material Change*
 - *Composite Blow in Door*
 - *Platy Filler Blocks Improvement (Tapered Stuffer – Gluing Three Pieces Together)*
 - *20D157 Durability Improvement*
 - *FLIR Screen Wire Study*
 - *Fuel Shutoff Valve Reliability Improvement*
 - *UHF Antenna Selected Panel – Upper UHF “Deselect”* SB# N-3695
 - *E-Bay Rack Hoist* SB# N-3692
 - *Control Stick Bushing Improvement* SB# N-3685

- **Maintainability Improvements**
 - *Brooklyn Bridge Miscellaneous Tools*
 - *Main Landing Gear Door Ramp Fitting Prototype* SB# N-3699
 - *Canopy Doubler Improvement*
 - *Engine Mount Replacement Tool*
 - *APU Exhaust Duct Improvement*
 - *Probe Adapter Film Heater Study*

Lockheed Martin Aeronautics Company

Figure 5

**The Department of Defense Awards Program for
Excellence in Performance Based Logistics
Achievements – Section 4**

CITATION TO ACCOMPANY

THE

DEPARTMENT OF DEFENSE

PERFORMANCE BASED LOGISTICS AWARD

(SYSTEM LEVEL CATEGORY)

The F-117 Nighthawk Total System Support Partnership Team distinguished itself by demonstrating outstanding achievement in Performance Based Logistics development, implementation, and execution between 1 July 2004 and 30 June 2005. During this period, professionals of the F-117 Systems Squadron and Lockheed Martin Aeronautics Corporation-Palmdale benchmarked innovative business practices which incentivized teamwork that increased weapon system availability and bolstered combat readiness, allowing America's precision stealth fleet to deploy to a classified overseas contingency location only two weeks after a Headquarters Air Combat Command Operational Readiness Inspection. By utilizing innovative contracting approaches such as award fees and incentive fees with a 50/50 cost share, Team Nighthawk exemplified government and industry teamwork to enhance the warfighters' capabilities. As a pilot program for Reduction in Total Ownership Cost, the F-117 Total System Support Partnership contract saved the Air Force \$217 million, and earned the distinction as the premier example of a model Performance Based Logistics contract. The pioneering efforts and superior

achievements of the F-117 Nighthawk Total System Support Partnership Team reflect great credit upon the United States Air Force and the Department of Defense.