

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

Section 2

Summary of Criteria Accomplishment

Warfighter-Based Capabilities and Outcomes

Mission Success: The goal of the C-17 Performance-Based Logistics (PBL) program is to provide world class support to all national operators while simultaneously ensuring best value for every dollar spent. The Globemaster Integrated Sustainment Partnership (GISP) provides C-17 peculiar supply chain management, aircraft depot level modifications, and field-level sustaining engineering services using a "Virtual Fleet (VF)" concept in which all spares and services are pooled and distributed world-wide to support the airlift needs of our 7 global customers. In terms of flying, the C-17 continues to set the standard by which all other combat cargo aircraft are measured, producing over 218,000 flying hours and 55,000 sorties. This sustained annual flying rate of roughly 950 flying hours per aircraft is over twice that of the other strategic airlift systems. For the USAF, this results in a logistics departure reliability of over 95 percent supporting Operations NEW DAWN, ENDURING FREEDOM, ODYSSEY DAWN, as well as world-wide humanitarian relief missions.

Materiel Availability: The C-17 provides its operators with an operational availability of over 86 percent, 35 percent more than other strategic airlift platforms. The GISP ensures that 84 percent of all demands made for C-17 peculiar parts at any of the 18 global bases are issued at the time of the initial requests. If a part doesn't issue, creating a mission limiting condition, that part arrives at the ordering location within 48 hours, 98 percent of the time. This high issue

effectiveness and fast Mission Capability (MICAP) part closure rate led to a supply down time of less than 2.5 percent; the lowest supply down rate of any USAF maintained and operated aircraft fleet. Additionally, the GISP meets its depot timelines delivering 88 of 90 aircraft on-time or early. Figure 1 depicts C-17 Utilization and Availability for the last 8 years.

Material Reliability: With its focus on providing high levels of operational availability, the C-17 continues to improve overall aircraft reliability achieving an average of 41 operational sorties between system breaks. The GISP runs a robust, globally inclusive material improvement program which has netted a 38 percent increase in MTBMc over the last 6 years. Figure 2 shows the growth in the C-17 system level reliability since inception, as well as reaching the one million flying hour milestone in 2006.

Sustainment Strategy Effective/Efficiency

Ownership Cost Reduction: June 2011 proved to be a culminating year for determining the C-17 product support strategy. After a series of Business Case Analyses demonstrated that additional efficiencies could be gained, the Air Force accepted a Boeing proposal to perform the Product Support Integration (PSI) role at an estimated 30-year life cycle savings of \$12.4 billion. In FY12 over \$42 million was saved, lowering the contracted cost per flying hour by 10 percent. Boeing will continue to reduce costs by restructuring processes to increase efficiency, and Figure 3 shows the expected sustainment cost curve of the new product support strategy. The C-17 VF has been a “game changing” concept of operations for C-17 support. By treating the challenge as a single fleet of 239 aircraft at 18 bases, GISP is able to achieve economies of scale benefitting all customers. According to the NATO Airlift team lead, “The C-17 Virtual Fleet is all about affordability, extreme affordability – like none before.” Boeing recognized that many

of our customers operate out of Qatar and took advantage of the in-place supply infrastructure supporting that nation's two aircraft fleet. In cooperation with the Qatari government, Boeing utilized local warehouses to provide increased support to VF partners flying OEF missions out of Qatar. Since November 2011, the USAF has taken receipt of 77 parts because of this arrangement, including parts to return 6 aircraft to mission-capable status to support OEF requirements. In addition, Boeing saw that over 150 pallets of C-17 wheels and tires were being shipped between the CENTCOM AoR and repair facilities. They deployed a repair capability that results in a savings of over \$1.5 million per year and frees up the equivalent of one C-17 mission a month for USTRANSCOM.

Public-Private Partnering: A key element of GSIP's success is the private-public partnership developed with the Air Force Air Logistics Centers (ALCs). This teaming approach uses a direct commercial sales approach to leverage the best of industry and government logistics processes. In FY12 roughly 88 percent of all C-17 depot workload is impacted by a partnering arrangement. Responding to force structure changes in the FY13 President's Budget, the team capitalized on freed-up organic capacity, shifting 8 aircraft modifications and nearly 200,000 labor-hours to WR-ALC. This additional capacity increased the C-17 FY13 organic work percentage 6 percent (to 44 percent total) and saved the Air Force over \$6 million. In fact, the C-17 has steadily ramped up its organic depot work load to over a million hours in FY12, as depicted in Figure 4. To enable such rapid re-planning and improving our mutual understanding of goals and requirements, the C-17 stood up a "Combined Program Office" where Boeing and USAF personnel work side-by-side out of government-owned facilities at Robins AFB GA. The Boeing C-17 Sustainment Program Manager is the only known industry Vice President working daily behind the gates of a USAF installation.

Systems Engineering Approach: Boeing Field Engineering Technical Services (FETS) uses a hub and spoke approach to support global operations. The direct result of the FETS construct is enhanced operational reliability and platform capability particularly in support of contingency operations. The average response time for an engineering assistance request is less than 12 hours, in contingency locations it is generally less than 8. This ensures scheduled cargo-loaded aircraft make on-time combat support mission departures. Another feature of the VF is the community adoption of the C-17 systems engineering process. This saves time and money by avoiding airworthiness determinations on a country-by-country basis.

Footprint Reduction: The GISP conducts frequent reviews of process and procedures with an eye toward affordability and the continuous improvement process. One of these reviews identified the potential for cost savings by not buying intermediate-level avionics repair capability for new USAF bases. Instead, as the Supply Chain Manager, Boeing routes unserviceable avionics to USAF bases with available intermediate capacity for rapid repair. This initiative saved over \$30 million initially and garners a recurring yearly savings in excess of \$600,000. The C-17 also utilizes a centralized approach for Recovery and Modification Services. Technicians are drawn from across the enterprise to conduct global recovery operations. Since July 2011, two aircraft in the Central Command (CENTCOM) AoR have been damaged, recovered and repaired in an average of 45 days.

Obsolescence Management: The GISP utilizes a Level 3 Diminishing Manufacturing Sources & Materiel Sources Obsolescence Management Program. In the last year, the C-17 revitalized its Obsolescence Working Group to identify and prioritize obsolescence issues and mitigation strategies. During this timeframe the partnership had three major successes. First, it developed and fielded a \$1 million Aircrew Data Transfer Device replacement program which eliminated

the field's number one cannibalization action. The group also identified processors going out of production. In one case, Boeing bought a sufficient quantity to support ongoing modernization and sustainment efforts, and in another a modernization project is changing its design to ensure out-year producability and supportability.

Innovative Contracting Support Approach: Concurrent with FY12's new product support strategy came a new PBL contract—the first USAF total weapons system sustainment Indefinite Delivery/Indefinite Quantity services contract. Senior DoD leaders, namely OSD/AT&L, recognized the GISP contract as “the PBL pathfinder – a model for the future.” Under the GISP PBL contract, The Boeing Company remains the PSI in return for guaranteed performance in aircraft availability, supply chain effectiveness, and field support. A single contract and requirements process bundles USAF and other nations' requirements into a small set of task orders. These contain a combination of Firm Fixed Price (FFP) and Cost Plus Incentive Fee elements. In concert, these orders produce a single source provider that underwrites support, availability, and 24/7 customer service to every C-17 operator anywhere in the world. The GISP contract includes a 5-year basic (FY12-16) order period with 5 one-year options. Sustainment costs are borne pro rata by all customers based on a single per unit cost for flying hours/engine cycles (FHs/ECs). Each customer's estimated FHs/ECs are used to award an annual FFP contract. Under our PBL arrangement Boeing is responsible for aircraft availability, C-17 peculiar supply chain management, and field support outcomes. Over the last 6 years, Boeing has met or exceeded performance requirements in all these areas (see Figure 5). This sustained performance is the result of outstanding teaming, where both the government and Boeing understand each other's requirements and constraints while sharing a common vision of what adds value and success.

C-17 Utilization and Availability

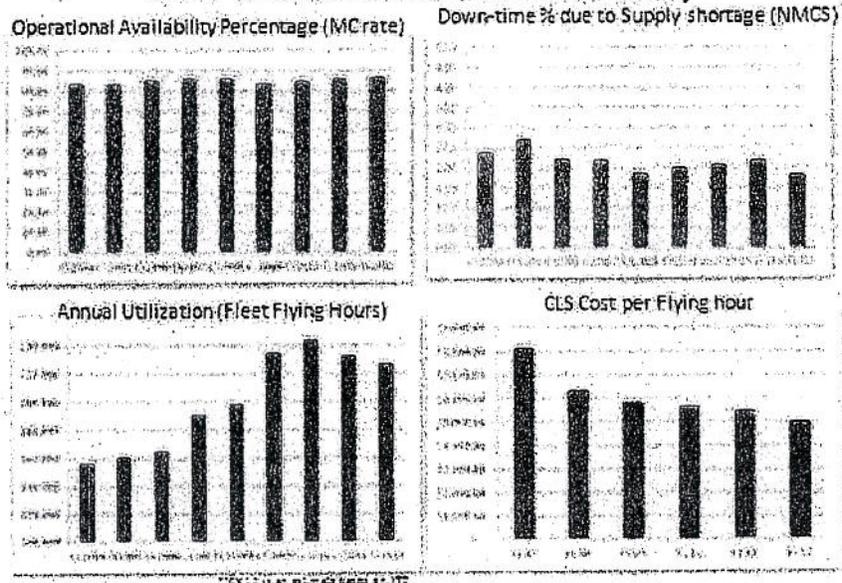
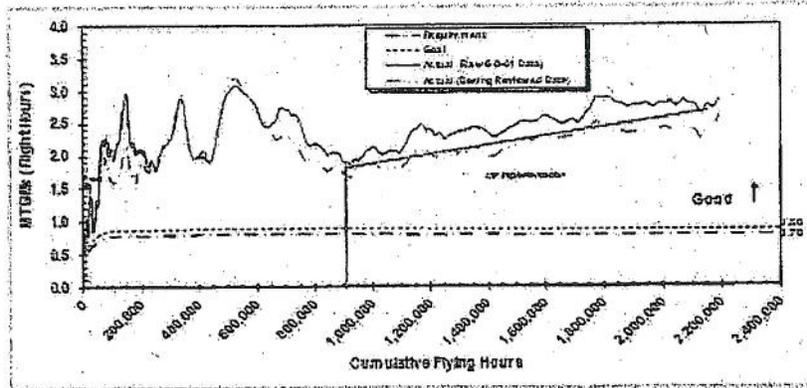


Figure 1 C-17 System Availability and Utilization

C-17 Reliability Improvement



Growth in Mean Time (flying hours) Between Corrective Maintenance

Figure 2 C-17 Reliability Improvements

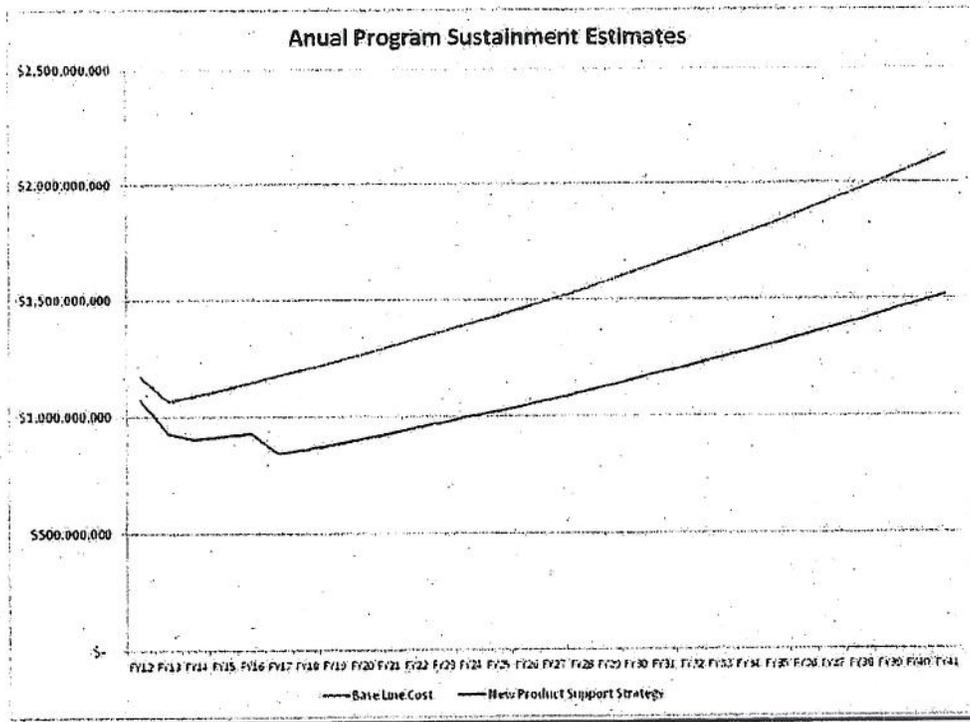


Figure 3 New Product Support Strategy Costs Savings-- \$12.4B over lifecycle

Increasing use of organic Depots

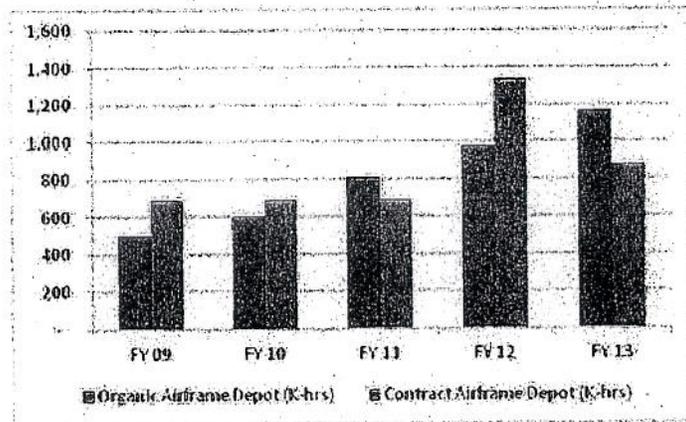


Figure 4 Depot Aircraft Organic Workshare 2008 -2014

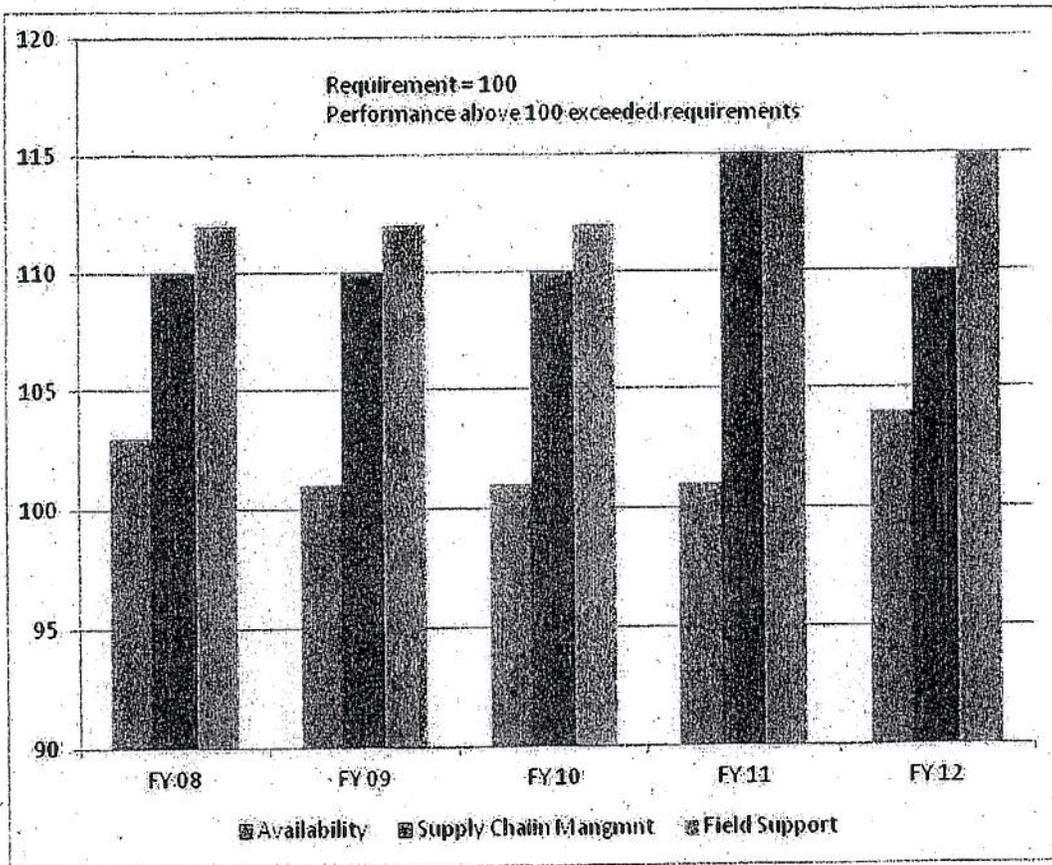


Figure 5 Boeing Performance Exceeds Requirements

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Section 4

Achievements

The C-17 Globemaster Integrated Sustainment Partnership (GISP) is recognized for its performance-based logistics teaming of the United States Air Force and Boeing to provide global sustainment support to all operators of the C-17. This team ensured unsurpassed aircraft availability and reliability for 239 aircraft, based at 18 main operating locations for the air or defense forces of the United States, the United Kingdom, Australia, Canada, Qatar, the United Arab Emirates and NATO. Using a "Virtual Fleet" construct, they pooled and positioned spares and services enabling 55,000 sorties and over 220,000 flying hours while maintaining an 86 percent aircraft in-commission rate with an average of 49-sorties flown between aircraft failures. The globally stocked and positioned inventory ensured 84 percent of all supply needs issued at the time and place of the initial order. By aggregating requirements, examining demand patterns and repositioning buy and repair processes, costs per flying hour were reduced 10 percent, to the lowest level experienced in 7 years. Additionally, over 300,000 labor-hours transferred from contract to organic depots, a 25 percent increase over the previous year. In Fiscal Year 2012 the C-17 sustainment partnership broke new ground by introducing a services based Indefinite Delivery/Indefinite Quantity contract for system level sustainment. Under this new structure, the C-17 Air Force- Boeing Partnership continued its 10-year history of meeting or exceeding operator sustainment requirements at an affordable cost.