



The Boeing Company / C-17 Globemaster III Sustainment Partnership (GSP)
Aviation Week Program Excellence Award: System Production/Sustainment Category

Introduction

The C-17 GSP program has matured over fourteen years as a PBL; this abstract will focus on performance metrics, program complexities, organizational processes and the value creation found within the program from January 2008 through January 2011.

The C-17 Globemaster III Sustainment Partnership (GSP) program is the most successful Performance Based Logistics (PBL) contract in history. Under GSP, Boeing has guaranteed and delivered the best readiness rates in military airlift and lowered costs at the same time most U.S. Air Force (USAF) organically supported aircraft costs have increased. Boeing GSP tasks and scope while executing with Total System Support Responsibility (TSSR) for the U.S. and international C-17 fleets include: Program Management, Sustaining Logistics, Material and Equipment Management, Sustaining Engineering, Depot Level Aircraft Maintenance, Engine Management, Long Term Sustainment Planning, Air Logistics Center Partnership support, and support of Foreign Military Customers. Boeing is responsible and accountable for total weapon system availability and performance through management, direction and integration of program support activities and resources. The program began as an acquisition vision in 1998, employing highly innovative support concepts designed to motivate and incentivize the contractor's behavior to perform, continually improve and deliver guaranteed airlift capability to all C-17 customers.

Global C-17 Customers

All USAF and international bases have Boeing representatives performing various program management and maintenance functions to support the Warfighter – including deployments to the Area of Responsibility (AOR) to assist with maintenance recovery teams. As of this writing, when all aircraft on order are delivered, there will be 249 C-17's flying worldwide (223 USAF, 26 international).

C-17 GSP Metrics: Our Foundation for Program Excellence and Continuous Improvement

The C-17 GSP program is evaluated using several types of metrics found in three categories: Process-Based Management (PBM), Contract Requirements and Award Fee metrics.

Process-Based Management (PBM) Metrics: C-17 GSP instituted PBM metrics very early in the program as a contractual requirement. While no longer a contract requirement, Boeing and the USAF continue to monitor PBM performance within all GSP Integrated Product Teams (IPT's). The PBM goal is to produce a business culture based on continuous process improvement; as a result GSP operations have become process-based, seamless and predictable.

As C-17 GSP processes progress through the seven-step PBM methodology, annual improvement goals are established; plans are developed and then executed. When processes complete step seven and improvements are validated, they return to step two and identify new tasks to be improved, adjust metrics to set a stretch goal and complete the seven steps again - a continuous improvement "loop".

C-17 GSP Metrics (cont)

Examples of C-17 GSP PBM process improvements in engineering, technical order and supply chain areas follow:

- 36% timeliness improvement of incoming C-17 engineering source data to the Technical Publications IPT. Process improved from 58% on-time in Jan 08, to 94% on-time in Dec 10.
- 39% cycle-time improvement of Support Equipment Request Documents (SERD) Approvals. Process improved by 31 days, 79 day cycle-time in Jan 08 to a 48 day cycle-time in Dec 10.
- 4% timeliness improvement of the C-17 Spares Selection Worksheet process, equates to a full two day improvement. Process improved from 95% in Jan 08 to 99% Dec 09.
 - As described earlier, this PBM requirement was then adjusted from 10 days to 8 days and the new (more challenging) requirement is then expected and continues to be met

GSP Contract Requirement Metrics: By customer design, many GSP contract requirement metrics performance thresholds increased (stair-stepped) throughout the years, effectively “raising the bar” to promote contractor continuous improvement. C-17 GSP has met or exceeded all Contract Requirement metrics since 2001 (during continuous USAF contingency operations). Actual Contract Requirement metric results from January 2008 through January 2011 follow:

Jan 2008-Jan 2011 Actual Contract Requirement Metric Performance Average

GSP Contract Metric	Requirement	Actual Performance (Average Jan08-Jan11)
Flying Hours Achievable	95%	99%
Fleet Issue Effectiveness (repairable)	82%	90%
Fleet Issues Effectiveness (all others)	80%	83%
Mission Capability Management (MICAP) Services (USAF within 48 hrs)	80%	96%
MICAP Services (International within 96 hrs)	80%	98%
Acft Depot Maintenance Scheduling Effectiveness	98%-101%	100%

GSP Award Fee Metrics: Over the years, GSP Award Fee metrics have changed to focus on what is most important to USAF and international C-17 customers. Each metric is assigned an IPT executive sponsor whose mission is to maintain the highest situational awareness and take immediate corrective action when necessary. The following objective award fee metrics are weighted depending on their impact to fleet availability: Fleet Performance Aircraft Availability (20%), Depot Maintenance Scheduling Effectiveness (15%), Non-Mission Capable Maintenance Unscheduled (10%), Mission Incapable Awaiting Parts (10%), Serviceable Propulsion Systems (10%), International MICAP (5%), Non-MICAP (5%), Issue Effectiveness Repairable (5%), Issue Effectiveness All Others (5%), Flying Hours Achievable (5%) and Time Compliance Technical Order Cycle Time (5%). Additionally, a five percent subjective award fee amount may be added or subtracted to the objective results which provides the Fee Determining Official flexibility to recognize exemplary or poor performance. FY2008-10 actual Award Fee Metric Performance:

Fiscal Year	Average Award Fee Capture
2008	82%
2009	UCA
2010	94%

C-17 GSP Metrics (cont.)

In GSP's most recent award fee period, Boeing captured 97% of the available award fee pool (including an additional 2% subjective award). The Air Force Program Executive Officer for Aircraft, Lt General Thomas Owen remarked in the November 2010 award fee letter, "Boeing's performance this period was accentuated by several significant events that include their efforts to establish CATE (C-17 Automated Test Equipment) availability in the AOR and improvements to main landing gear door inspections. Additionally, Boeing initiatives in cost cutting ventures continue to enhance the Air Force's ability to excel in today's operational tempo."

C-17 GSP Program Complexities: Collaboration and Innovation Overcomes Challenges

C-17 GSP is a multifaceted contract. Inherent complexities require close contractor-customer collaboration to quickly address and repair issues. As noted in the previous award fee section, Boeing captured zero percent award fee in FY09 due to an Undefined Contract Action (UCA) for the FY09 proposal. Under an aggressive proposal schedule, the FY09 UCA was needed to ensure there was no gap in sustaining the C-17 fleet. UCAs are an unfavorable contract "band aid" that transfers risk to the U.S. Government and results in no incentive for contractors to perform efficiently or improve processes. Note: Though not contractually bound to perform to contract or award fee metrics in FY09, Boeing continued to meet or exceed these metrics. In 2009, Boeing and U.S. Air Force formed a UCA retirement tiger team to definitize all outstanding contract UCAs. In 2009, the Boeing/U.S. Air Force team began with nine UCAs and as of January 2011, has definitized two of the UCAs (a value in excess of \$210M) and four others have progressed to the point that definitization is imminent. The remaining UCAs are being worked aggressively with a goal to definitize all of them by September 2011. Boeing and the USAF have committed to not using UCAs as a viable acquisition strategy for C-17 support in the future.

Executing unique processes to address logistics complexities *before* they become issues is one of the C-17 GSP program's best practices. An excellent example is the one-of-a-kind C-17 "Virtual Fleet" process where GSP has simplified a complex customer need by shrinking the C-17 logistics footprint for small FMS fleets that would otherwise have to manage their own supply chain infrastructure. By combining USAF and international customers into a common spares pool, this GSP innovation provides the most cost effective and efficient military aircraft spare parts network in the world. The Virtual Fleet process allows FMS customers to enjoy global spare parts availability and savings by buying into the *enterprise* C-17 spares pool. If an international or U.S. Air Force C-17 lands at any other C-17 base and requires a part, the Virtual Fleet protocol allows that aircraft to get a part with limited to no delay. Recent examples of the Virtual Fleet in action include: February 2009, a United Kingdom (UK) Royal Air Force (RAF) C-17 transiting Canada needed parts for its Aeromedical Evacuation configuration; Canada found the parts and the UK successfully completed the important mission. In summer 2010, a USAF C-17 was grounded at RAF Mildenhall for a vertical stabilizer fault; the UK RAF base at Brize Norton sent a maintenance team to troubleshoot the fault and replaced the failed part with one off of their shelf. Finally, a UK C-17 was out of commission at Charleston AFB, South Carolina with Hydraulic problems; the USAF issued a hydraulic sensor and assisted in returning the aircraft to service.

C-17 GSP Organizational Processes: Innovation in a Performance-Based Environment

In the 2008-2010 timeframe when the USAF began to plan in-sourcing some GSP support tasks to Warner Robins Air Logistics Center (WR-ALC), Ga. Complexities included the inherent risks associated with staffing and resourcing new skill sets in Georgia. To mitigate these risks, the

C-17 GSP Organizational Processes (cont.)

USAF and Boeing stood-up the C-17 Combined Program Office (CPO) at WR-ALC. A joint agreement was made to relocate Boeing program management leadership and approximately one hundred employees to work shoulder-to-shoulder with their Government counterparts at Robins AFB, Ga. In June, 2010, the GSP program manager, a Boeing vice president, moved his family from Long Beach, CA to Warner Robins, Ga. Since then, six other Boeing employees have moved, supporting the plan to fully populate the CPO by the end of Fiscal Year 2014. We know of no other industry vice president that is permanently located and working “behind the gate” on a U.S. Air Force Base. “Today’s environment requires us to tailor our support concept to continue to meet the needs of the warfighter” said Colonel Chris Garrett, C-17 System Support Manager. “This innovative collaboration is the best solution to ensure we deliver what is needed, on time, every time.”

C-17 GSP Value Creation: Highest Readiness at the Lowest Cost

Organizational processes and a continuous improvement culture nurtured by a PBL construct have resulted in GSP providing the highest readiness at the lowest cost. According to the Air Force Total Ownership Cost (AFTOC) and G081 databases, for the Jan 08-Jan11 performance period, C-17 GSP support costs have been reduced by approximately sixteen percent while maintaining an 85% C-17 fleet Mission Capable (MC) Rate average. This is made possible by several factors, including the significant value added to our operational customers by C-17 Field Engineering and Technical Services (FETS) teams. Cost Avoidance and Mission Capable Rate improvement for GSP operational customers occurs when Boeing provides troubleshooting assistance to accurately identify the cause of C-17 discrepancies, preventing incorrect component(s) replacement or replacing a subassembly in lieu of a higher-level assembly. For the Jan 08-Jan 11 performance period, estimated Operational Cost Avoidance exceeded \$21M. Additionally, the Boeing FETS teams provided over thirty-two thousand hours of informal training to USAF and international personnel.

Conclusion:

For the performance period, C-17 GSP has continued its journey to improve program processes. With the use of PBM metrics, Boeing has met or exceeded all GSP contract metrics and performed very well to capture the available award fee. Collaboration and trusted IPT relationships are paramount to solving issues inherent to a large-scale complex program like GSP. Innovative GSP processes provide a global logistics support network and promote C-17 interoperability. GSP’s value creation translates into the highest airlift readiness at the lowest cost.

C-17 GSP Program Manager Biography



Gustavo M. (Gus) Urzua is Vice President & Program Manager of the C-17 Globemaster III Sustainment Partnership (GSP) program, a sub-division of the Global Services & Support Business Unit within Boeing Defense, Space & Security. Since 1999, Urzua has led the C-17 sustainment team, focused on aircraft readiness and after-delivery support through performance based logistics contracts, innovative supply-chain management, industry-leading engineering services and public/private partnerships, with operational sites located throughout the world.

Prior to Boeing, Urzua served six years in the United States Navy, where he worked as an Aircraft Maintenance Supervisor. Since joining Boeing in 1984, has held numerous leadership positions focused on Logistics, and was promoted to vice president in May of 2005.

Urzua holds a Bachelor's degree in Aviation Management from Southern Illinois University at Carbondale and completed his Executive Master's degree in Business Administration from Pepperdine University in California.

With more than 30 years of aerospace experience, Urzua has mastered the art of managing priorities and placing the appropriate balance on people, financials, technical program requirements and long term strategy.

Program manager leadership attributes:

- Maintaining a leadership role in C-17 support from the beginning of the program and played an integral role in the development and execution of the very first system-level PBL contract with the Air Force, C-17 Flexible Sustainment. **This affords the program critical continuity and familiarization with customer requirements and contractor/customer rapport.**
- Exemplifies the Boeing "People First, Customer Always" culture.
- Demonstrates the value placed on people by continuously investing resources to inspire, motivate and team-build.
- Communications: Maintains and executes a comprehensive communications plan for all C-17 GSP stakeholders, promoting two-way communication
- Promotes customer and employee feedback using annual surveys
- Sets high expectations that will stretch the team but results in delighting the customer
- Holds people accountable for their performance
- Inspires others and gains trust by consistently delivering on promises to customers and the GSP team.
- Accountable to the C-17 Stakeholder "Shared Destiny and Program Operating Principles"

The USAF determined that a C-17 GSP Combined Program Office was needed beginning FY12. In July 2010, Urzua physically relocated, with family, from Calif. to Warner Robins, Georgia. - 15 months prior to requirement, affirming Urzua's commitment to the partnership's success.

Representative of Program Customer

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