Aviation Ground Power Unit (AGPU) at Letterkenny Army Depot (LEAD)

LEAD is a government owned and operated installation located in Chambersburg, Pennsylvania with an area of over 18,000 acres and over 1.5 million square feet of interior floor space. The AGPU mission is one of the largest at LEAD. LEAD produces 938 unique end items. Based on revenue, AGPU is currently ranked 13th. With only 2.3% (61 people) of the depot's employees utilizing 1.6% of the interior floor space, the AGPU programs account for 3.6% of LEAD's total revenue. LEAD is the largest employer in Franklin County, contributing over one quarter billion dollars annually, making it the driving force in the local economy.

AGPU

The AGPU is a multi-function system that provides support to a wide range of helicopters within the Army's inventory. The AGPU provides A/C and D/C power, hydraulic pressure, and pneumatic power to assist in aircraft testing and trouble shooting for the AH-64 Apache, UH-60 Blackhawk, CH-47 Chinook, UH-1 Iroquois, OH-58 Kiowa, OH-58D, and MH-53 Pave Low. The AGPU system is currently deployed in Iraq, Afghanistan and around the globe. LEAD is the only facility that provides an extensive AGPU rebuild program. The original equipment manufacturer no longer produces the AGPU system or the Service Life Extension Program (SLEP) for the Aviation Ground Support Equipment (AGSE) program office.

AGPU Mission at LEAD

LEAD is responsible for providing the Army with AGPU rebuild capabilities that are not available from any other public or private organization. We provide a full spectrum of services including: program management, overhaul, upgrades, modifications, manufacturing, field-level support, soldier familiarization training, systems integration and product support. Today, AGPU's mission consists of four major rebuild programs with duties such as: equipment rebuild, preservation, storage, fielding and a wide-range of technical and subject matter expert support to the Army. The AGPU mission goes hand in hand with LEAD's mission of ensuring the readiness, sustainability, and safety of forces in a full spectrum of operational environments. Over the last four years AGPU workload has grown over 625%. It has expanded from one program to four programs in order to meet our customer's continually changing needs. AGSE and LEAD are drafting plans for LEAD to produce the first new AGPUs in 25 years.

People

LEAD is comprised of over 2,675 Army civilians and contractors. Employees are empowered and encouraged to participate in formal and informal events and to recommend improvements through the Army Suggestion and/or Value Engineering Programs. Employees also offer many solutions through informal discussions with other work areas and supervisors. Currently, 100% of the employees in the AGPU production line and supervision have participated in lean 101/6S training. This training has given the employees the basic tools they need to aid in solving problems and drive continuous improvement.

When the AGPU program first began, no one at LEAD had any maintenance experience on the AGPU system. A handful of mechanics with different backgrounds and one representative from AGSE were able to start the small program. Working together as a team, LEAD and AGSE were able to conduct on the job training and develop basic work instructions. We all learned by doing. During this time the representative from AGSE was required to inspect every completed asset.

The AGPU team took it upon themselves to conduct research, contact local vendors and work through obstacles with engineers. This effort was the determining factor in establishing a program from nothing. After about a year of continued learning, AGSE no longer required their inspector to look at every unit prior to shipment to the soldier.

Our employees offer solutions on a regular basis that continue to help satisfy the

customer and improve the program. These solutions are extremely important as the complexity and demand for the program changes. Work instructions that were written by the employees are one prime example of an employee driven initiative that continues to provide a valuable resource to everyone in the AGPU shop. Employees helped drive the move from a bay build operation to one piece flow. Our one piece flow is supported by the established work instructions which prove to be an excellent tool in training new employees.

Process Improvement

LEAD's business model is built upon the fundamentals of lean. From its inception as a trial program in December 2005, the AGPU team was surrounded by an already changing culture based on lean values and principles. LEAD began its lean journey in 2002. AGPU employees joined the rest of the depot in continuing to both understand and embrace LEAD's continuous improvement principals and values. As more and more employees were brought into the program from throughout LEAD, they were able to bring their own experiences in lean to the AGPU program. All AGPU employees have received four hours of lean basic training, which includes a presentation and hands on simulation. During the simulation, trainees get the opportunity to learn by doing as they participate in a factory's transformation from batch-and-queue to a one-piece production flow. They observe and learn the importance of basic tools such as standard work, visual management, and poka-yoke. AGPU utilizes the A3 process, policy deployment and Process Based Leadership (PBL) to ensure alignment to enterprise goals.

Member Driven Initiatives (Two Piece Summaries)

The AGPU employees at LEAD are the life blood of its programs. It is understood across all levels of management and support processes that the employees performing the rebuild work on the AGPU are extremely important. This is why employees are always included in improvement events and their ideas are incorporated into the process to continually make process improvements.

A more recent success story came from the wire harness board area of the AGPU assembly line. Jody Bonner noticed that the cost of a rubber back shell bushing was $965.85 each. After doing some research, a replacement was found at a cost of only $0.78 each. This is a cost savings of $965.07 per AGPU produced. The change was made and LEAD is looking forward to saving over $240,000 by May 2011.

Another employee idea was identified during a quality lean event. The event was focused on reducing the number of rejects found on each AGPU. There were three employees from the AGPU line that were working to resolve one of the higher level rejects when they came up with an idea for protecting inserts from being painted.

In the past, the AGPU shell would be blasted 100% and painted before assembly. During this process there were 67 inserts that were being painted and the employees had to remove the paint by tapping the inserts. The three AGPU employees suggested leaving the old hardware in the inserts through the blast and paint process. This eliminated the need for tapping the holes after painting. This suggestion reduced the cycle time in the bay where the tapping occurred by about 22 minutes which equates to over $3,700 in annual cost savings.

These simple yet effective ideas will save the AGPU program almost $250,000 this fiscal year. This doesn't include the added savings from reduced rejects and rework. Incorporating the employee solutions into the process and communicating the results shows them that leadership values their opinion and this mutual trust empowers them to continue to offer improvement solutions. Employee empowerment has proved to be invaluable to our continuous improvement efforts.

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