Arnold Engineering Development Center (AEDC) Aerospace Testing Alliance (ATA) Program Highlights

The Aerospace Testing Alliance (ATA) at Arnold Engineering Development Center (AEDC) operates and maintains 63 test facilities for the United States Air Force at Arnold Air Force Base, TN; White Oak, MD; and NASA’s Ames Research Center in CA. AEDC is the most advanced and largest complex of flight simulation test facilities in the world. Originated in 1951, the center operates aerodynamic and propulsion wind tunnels, rocket and turbine engine test cells, space environmental chambers, arc heaters, ballistic ranges, and other specialized units. The center’s test facilities simulate flight conditions from sea level to space and speeds up to Mach 20, with 27 test capabilities unique within the United States and 14 worldwide. Every high performance aircraft, missile, space launch system and most satellites in use by the U.S. Department of Defense today have been tested at AEDC as well as all of NASA’s manned spacecraft and many commercial aircraft and spacecraft. As the primary contractor at AEDC, ATA’s mission is “to be a trusted partner in delivering best value war fighter support and asset stewardship to AEDC.”

In order to accomplish this mission of delivering best value war fighter support and asset stewardship, over 15,000 assets are maintained using a reliability based program focused on Preventive Maintenance and Predictive Maintenance best practices. Through classical and streamlined FMEA/RCM analyses, asset class level Asset Management Strategies and an ISO9001 certified Asset Management Process, a right-sized maintenance program continues to be developed and refined for these assets. This right-sized maintenance program includes maintenance approaches from run-to-failure while lection other assets utilize every PdM technology available. Various continuous improvement methods are used to assess potential deficiencies in our maintenance program, including formal root cause analysis, “quick asset reviews”, fault tree analysis, and cause-consequence analysis as well as ISO-based process audits. AEDC continues to gain benefits from the use of PdM technologies with reductions in facility downtime and cost savings to our overall maintenance program. We utilize a strong advocacy program to ensure continued support to our CBM/Pdm program by documenting and briefing success stories and overall cost savings to our client, the USAF. Their support as well as our upper management support has been the foundation needed to sustain our Pdm program.ATA and AEDC also believe in the value of external assessments by Pdm and maintenance experts as well as benchmarking so that we can take our program to the next level. Our desire to improve is encapsulated in the late Vince Lombardi’s philosophy— to continue to strive for perfection and we will achieve excellence along the way.