

StandardAero's Digital Knowledge Management System: Improving Efficiency & Reducing Cost with Electronic Technical Data

Our Customer's Challenge: Inefficient Systems and Lagging Technical Expertise Impact Maintenance Quality

Today's aerospace industry is complex, and companies must balance the realities of a reduced and less experienced workforce with increases in complexity and work requirements. Everyone must do more with less. Unfortunately, although many technical employees are highly skilled with long experience, many are nearing retirement. And at some companies, technicians continue to rely on outdated, time-consuming manual methods to gather the information required to perform their jobs. Diminishing technical capabilities and inefficient processes coupled with rising costs for labor and operations also are creating problems for aerospace. Smaller budgets translate into smaller staffs with increasing work requirements, and less experienced employees may not have the proficiency or processes to perform troubleshooting and maintenance tasks skillfully and efficiently. Studies show that up to half the engine systems and components returned for depot-level repairs do not require service. Unnecessary overhauls are obviously costly, causing not only unneeded maintenance work and costs of spares, but also aircraft downtime that operators can ill afford. New processes and electronic systems are needed to bridge the knowledge and efficiency gaps that companies are facing.

Connecting with Digital Natives

Studies show that 90% of Americans are computer literate and 75% of American homes have internet access. An astounding 98% of American children have computer access and 92% of American children play computer games. In fact, 50% of Americans play computer games. These statistics underscore the fact that younger generations are genuinely "digital" in nature: it is almost unimaginable to visualize today's generation leafing through paper technical manuals. Indeed, there is an expectation amongst new workers that technical data will be digital, accessible and intuitive. Organizations that do not make investments in digital media run the risk of losing some of its brightest and most promising personnel.



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Solution: **StandardAero's Digital Knowledge Management System**

StandardAero fully understands the difficulties involved in retaining and improving staff technical skills and is ready to work with operators to help them meet this goal. The company has applied its strategic capabilities to create a comprehensive approach to developing employee expertise in the broad field of maintenance repair and overhaul tasks. Applying the principles of knowledge management enables operators to have ready access to relevant documentation, information sources and solutions to potential problems that increase their understanding and facilitate completion of work assignments. This systematic framework strengthens performance, helping less experienced employees handle more complex tasks with detailed digital instructions that illustrate every step needed to complete an inspection or repair. Digital systems increase employee effectiveness and also encourage knowledge

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sharing and teamwork, building individual and group confidence that contribute to operational efficiency. These systems offer a resource custom tailored to each operator's requirements that meets rigorous organization IT security requirements and enables instant updates with minimal cost. The initial investment in digital systems for work and training more than pays for itself in increased operational efficiency and related cost savings.

Systematic Knowledge Means Systematic Performance

Knowledge management and utilization of electronic data systems for training and performance improvement provides significant benefits for operators. With complete information on work requirements ready at hand, even junior employees can operate at the same performance levels of more experienced technicians and produce high quality work. All employees, regardless of experience, can use digital training systems to accelerate learning to expand their capabilities and increase output efficiency. Time-saving knowledge management techniques with digital systems mean quicker turnaround and more accurate work products. In addition, efficiency increases since fewer parts are changed unnecessarily when employees refer to electronic data.

Digital knowledge management can supplant traditional instructional approaches, eliminating the need for instructors, classrooms and unproductive practice in procedures and techniques. With comprehensive instructional material in a variety of formats such as narratives, schematics, solid modeling and animated processes available on a computer screen, technicians can proceed with unfamiliar tasks with the assurance they're doing things right.



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Independent evaluation of knowledge management technology has measured specific system attributes. With a digital aid system, employees typically reduced time spent searching for electrical components by two-thirds, and accuracy of tasking increased 20 percent. Technicians using digital systems completed routine troubleshooting in a third of the time required with traditional paper manuals. Improved data availability reduced parts changes by half and cut task time by 20 percent. Animated processes also saved comparable time and improved accuracy, and system capability to display process simulations increased employee knowledge by ten percent.

Setting the Standard for Operational Efficiency

Digital knowledge management systems provide operators with rich content to facilitate maintenance tasks and training, and they can also be customized to address specific organization requirements. The investment in digital knowledge management pays off with significant improvements in operational efficiency with the right information at the right time to ensure high-quality maintenance. The system cuts initial and recurrent training time, achieves higher aircraft availability rates at lower

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cost, eliminates time wasted in information search and increases first-time rectification rates for troubleshooting. These advantages enhance operational safety, encourage employee satisfaction derived from effective learning and skill improvements and ultimately help organizations retain capable employees.

Learning Organizations: A Future Imperative

StandardAero emphasizes an integrated strategic approach to all facets of its business, an outlook that has placed it solidly in the ranks of industry leaders. Operators that work with the company can focus on knowledge management and redefine themselves as learning organizations. This sophisticated structure and method recognizes that constant change requires constant transformation to maintain competitive capabilities in any industry, especially aviation. Using digital systems as part of a knowledge management system to facilitate work and training involves all employees. The system compels everyone to learn and contribute not only to their organization but also to the environment in which it operates. True learning organizations adopt distinctive features, all of which are characteristic of StandardAero's approach. Insistence on systems thinking, technical mastery, clearly defined models that lead to excellent performance, team learning and a shared vision for the future has guided the company for years. Learning organizations are exceptionally productive and establish a paradigm that enables team members to create outcomes that deliver outstanding customer satisfaction with uniformly excellent products and services.



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Conclusion: The Strategic Value of Knowledge Management

StandardAero traces its beginning to the start of the industry it serves. Its long and successful history has enabled it to move to the forefront of aerospace MRO providers. Current services range from maintenance, repair and overhaul for airframes, propulsion and power systems, avionics and components to exterior and interior design and fabrication, training and documentation of programs and processes, inventory management and quality assurance.

With major service facilities in Australia, Canada, Europe, Singapore and the U.S. and 14 strategically located support centers around the globe, StandardAero generates annual revenues of nearly \$1.4 billion. The company places equal emphasis on service delivery and strategic approaches that will determine future MRO activities that in turn shape aviation fleet management methods that will enhance efficiency, reliability and most importantly, safety.

StandardAero’s 3,700 employees worldwide are high skilled professionals who also engage in continuous learning to transform the company in the face of the increasing demands of constant change. A systematic approach to knowledge management is a critical factor in providing exceptional capabilities to its customers and aviation operators and also in establishing StandardAero as a strategic leader in MRO. The company is uniquely focused on the context and evolving direction of its business and conducts its daily operations with future growth in mind. As a learning organization, StandardAero can impart the same vision and understanding of strategic practices to its customers and aviation operators.

