

Soaring to New Heights:



American Airlines' Rise in Maintenance and Engineering Operations

By Cormac Ryan, TMA International

In February 2006, SCIP's Dallas-Ft. Worth chapter launched the program series titled "Knowledge Is Power: How Dynamic Firms Utilize Competitive Intelligence to Achieve Strategic Objectives." Sponsored by SCIP, the University of Texas (UT) at Dallas, and the Dallas Business Journal, the series features senior executives from prominent companies describing the strategic challenges they faced and the role competitive intelligence played in helping them address those issues.

American Airlines was one of the initial corporate presenters in February 2006, along with Nortel and Brinker

Restaurants. Firms participating in subsequent programs were Cadbury-Schweppes, Lennox International, AT&T, Essilor America, Celanese, and Motorola. Held at the School of Management at UT Dallas, the series is continuing on a semiannual basis.

Each of the case studies demonstrated the important role that competitive intelligence played in helping these companies solve a strategic problem or capitalize on a strategic opportunity. In the case of American Airlines, the competitive intelligence process helped accomplish both objectives. The acquired competitive information and the

programs implemented as a result of this learning helped alleviate the airline's critical financial situation. In addition, American went beyond the "fix the problem" threshold and revised its organization and operations to help ensure future financial growth.

This article outlines the financial problems that American Airlines and other U.S. airlines faced beginning in 2001, the strategic decisions taken by American to counter this situation, and how competitive intelligence contributed to the company's turnaround. While this turnaround resulted from efforts in all areas of American Airlines' operations, this article focuses on the accomplishments of the company's Maintenance & Engineering (M&E) group.

THE FINANCIAL DOWNTURN IN THE AIRLINE INDUSTRY

After a period of sustained earnings, the U.S. airline industry posted record losses of \$8.3 billion in 2001 and \$11.3 billion in 2002. In the preceding six years (1995–2000), U.S. airlines generated over \$23 billion in net earnings. The 2001 downturn reflected an unprecedented decline in U.S. air travel spending. Driving this decline was a fundamental shift in industry trends:

- Economic decline and the events of September 11
- The growth of low-cost airline carriers
- The rise in access to low fares via the internet

American Airlines' 1994–2002 results mirrored that of its industry. After seven consecutive years of positive earnings, the company suffered dramatic losses beginning in 2001. Like other major U.S. carriers confronting serious financial problems, American had two choices: file for Chapter 11 and obtain bankruptcy protection from creditors, or embark upon an aggressive program to reorganize, reduce costs, and improve efficiency. American chose to find ways to improve operations and reduce expenses, and then implement the programs to make this happen.

THE STRATEGIC IMPORTANCE OF MAINTENANCE & ENGINEERING

American conducted in-depth evaluations of all aspects of its business: schedule efficiency, fleet simplification, customer interaction, pricing and distribution, in-flight products, flight operations, and headquarters and administration. The severity of American's problems necessitated a thorough investigation; management insisted that no stone be left unturned. This was not a theoretical "business school" exercise — the airline's survival depended on the outcome.

M&E represents a critical component of American's operations. With an annual budget of \$2 billion, M&E

activities involve 12,000 people at more than 100 sites around the world. Beyond the sheer volume of work, time, and expense involved in M&E, its functions are essential to American (and all carriers) to:

- Maintain equipment safety and performance
- Preserve jobs and salaries
- Generate American's long-term revenue opportunities

This last point was particularly significant. The company's strategic objective was to increase efficiency and performance in the M&E area, not just to reduce costs. It wanted to create a "best in class" M&E operation that would generate outside revenues in addition to meeting American's own needs.

This approach ran counter to industry trends. In an effort to reduce costs, most airlines outsourced as much aircraft maintenance as possible. The U.S. Department of Transportation estimated that in 2005, domestic airline carriers outsourced 47 percent of their maintenance. American planned to implement efficiencies that reduced time and costs. In addition, the company would increase its in-house maintenance capability, build capacity, and compete for the repair and overhaul work that other carriers wanted to outsource. American intended to perform more — rather than less — of its maintenance operations in-house, and convert its M&E operations from a cost center to a profit center.

American's fundamental goal was to maintain current employment levels — not to reduce or downgrade the current M&E organization. Within this broad objective, the company intended to:

- Identify third-party maintenance contract opportunities.
- Generate income using existing properties and personnel.
- Increase productivity through process improvement.
- Reduce materials inventory and, wherever possible, repair rather than replace.
- Identify alternative revenue opportunities (e.g., using core competencies).
- Maintain constant, open communications between management and labor.

This was the challenge on which American Airlines structured its competitive intelligence project for M&E: to explore all alternative avenues in both the organizational and operational areas. This project's marching orders came directly from American's top management. Studying the competition in depth provided the solution to understand the range of alternatives available and to make intelligent choices on how to best transition M&E to a viable, profitable operation.

AMERICAN'S COMPETITIVE INTELLIGENCE APPROACH

In keeping with management's "leave no stone unturned" imperative, the company's competitive intelligence team cast a wide net for the firms to investigate, including direct competitors, indirect competitors, best-in-class companies, and third-party maintenance providers. They examined both the traditional airline carriers — American's historical competitors — and the low-cost carriers.

Of particular interest to American was the level of maintenance outsourcing that each carrier chose to use, although a specific firm's outsourcing level was not the key reason in deciding to investigate it. American approached these companies directly and openly, and offered to exchange organizational and operational information with them for their mutual benefit. While the project examined available secondary data, its primary thrust was primary research — in-depth investigative reporting.

The company formed a Joint Leadership Team (JLT), consisting of a core group of union and management leaders who were tasked with leading the cultural and technical changes for the company. This was the group that contacted and visited the other airlines. To learn more about third-party maintenance providers, the team also contacted several firms in the area — not as a potential customer, but as someone interested in sharing best practices. JLT members visited third-party M&E facilities in numerous U.S. and overseas locations. Their conclusion was that American could compete effectively with third-party firms.

"We wanted our company and union leaders to see that third-party providers were everywhere, not just overseas," said Carmine Romano, American's Vice President of Maintenance in its Tulsa facility. "We wanted them to see these companies' capabilities, if they are growing and, if we were going to compete, how much it would cost. So we got everyone together and went to see them." American also approached several M&E organizations in major firms beyond the airline carriers and third-party providers. The JLT members exchanged ideas and conducted joint benchmarking exercises with several firms, including Boeing and Harley-Davidson.

Critically important to the project's success was the competitive intelligence team's undertaking this effort with an open mind and a healthy respect for the firms they examined. American is the leading carrier in the industry, and it was essential to avoid adopting an arrogant "we're bigger and better" mind-set vis-à-vis competitors and third-party providers. In the words of a senior American executive involved in the project, "we weren't resting on our laurels — we were completely serious in trying to find better ways to do our jobs."

The company's competitive intelligence team made sure that this was the prevailing attitude of the individuals involved throughout the project, and the members constantly

reminded themselves that American didn't have all the answers. "We benchmark ourselves against our competition," said Steve Glime, American's Product Support Manager. "We're looking at data to identify areas in which the competition does a better job and then drive to see how we can improve. We plan to close those gaps."

The mandate from American's management was to observe, learn, and change — and where appropriate, to create dramatic change.

A LOOK AT THE COMPETITION: SOME BROAD LESSONS LEARNED

American's competitive intelligence team embarked on this project with several expectations. What emerged from their investigation was a variety of findings and conclusions that matched these expectations, plus several surprises — additional information regarding other aspects of the total M&E operation. Here's a sampling of the findings and lessons learned:

Improved overhaul time. American reduced the "turn time" for the MD-80, its largest fleet, by distributing work among different crews at three different positions in a hanger using current dock configuration. This reduced the MD-80 turn time by almost 50 percent and enabled many employees to focus on other American projects or third-party work.

Dock workflow management system. A web-based application enables the company to schedule, assign, and track work and resources during maintenance projects. This system improved communications between departments and did so instantly, reducing the length of M&E projects and creating excess capacity beyond American's internal needs.

Overhaul instead of replacement. American made a conscious effort to implement a "repair instead of replace" policy. For example, failed pumps in aircraft toilets were once replaced at considerable cost; they are now repaired for a fraction of the original replacement amount.

Reduced component costs. American mechanics found that they were overpaying for jet engine air filters. With the Federal Aviation Administration's approval, the company significantly reduced its air filter costs by switching suppliers. American realized cost savings in other areas as well, affecting several maintenance components.

Improved training techniques. M&E training departments in all major American maintenance facilities now offer online training as well as classroom instruction. Other instruction is provided by moving personnel from one department to another. For specific product training, American usually sends the designated crew chief to the original equipment manufacturer. The crew chief then relays the instruction to crew members.

Engine work efficiency and overhauls. Workers reduced the time spent overhauling several major engines by 50 percent, cutting down the company's need to invest in parts and spare engines. They also reduced the square feet needed to overhaul these engines, creating enough room to allow work to be done on other engines within this space.

In these and other instances, American's competitive intelligence team learned lessons that they had hoped to learn, and acquired additional insights outside the parameters of the initial competitive intelligence assignment. As a result, they applied this learning to the organizational and operational improvements for American's internal M&E requirements, as well as developing a best-in-class facility to compete effectively for outside third-party contracts.

A SUCCESSFUL OUTCOME: AMERICAN'S THIRD-PARTY M&E WORK

As previously noted, the company's long-term strategic objective was to transform its maintenance organization into a world-class operation to generate profit. It sought to accomplish this by offering outside customers a one-stop shop for all their maintenance needs. Today, in addition to fulfilling its own maintenance requirements, American has more than 70 customers — 80 percent of whom are repeat business — located in North and South America. Current customers include Allegiant Air, Synergy Aerospace, Omni Air, Avitas (aircraft leasing), American Eagle, North American Airlines, Alcoa, Avianca (Columbian airline), Capital Cargo, TAESL (Texas Aero Engine Services Ltd.), FedEx, and Miami Air.

Allegiant Air signed a four-year comprehensive maintenance agreement with American in late 2006. This agreement includes heavy maintenance overhaul checks on Allegiant's current fleet of aircraft, plus additional aircraft as the airline grows. The scope of the work includes engineering services, planning services, component maintenance, reliability services, and landing gear work. Mike Baxter, senior vice president of technical operations at Allegiant Air, said "one reason we chose AA Maintenance Services for the long term was because it offers value. We looked at the total value of the package. Not only are the workmanship and materials of the highest quality, but we also get our aircraft returned in a timely manner, meaning they can be back in revenue service sooner."

American Airlines achieved profitability in 2006, after five consecutive years of losses. To maintain its revenue momentum, the company continues to invest for future growth. According to *Overhaul & Maintenance* magazine, the worldwide maintenance, repair, and overhaul industry is expected to grow from its current level of \$38.8 billion to \$48.8 billion in 2011, fueled by rapid growth in aviation

throughout Asia and the Middle East. Because of this opportunity and the company's progress to date, American Airlines continues to spend aggressively to expand its third-party M&E capabilities. This expansion includes ongoing updates to maintenance facilities and investment in new technologies.

Recently, the company announced that it will authorize investments of up to \$100 million to expand its third-party maintenance capabilities. "By making this investment, we are sending a clear message to our existing and prospective customers that American Airlines is very serious about providing long-term maintenance services," said Don Videtich, a maintenance representative for the union's air transport division.

"We have an extraordinary opportunity to take our maintenance services to the next level," said Bob Reding, American's Senior Vice President of Technical Operations. "In the last three years, we have worked with our TWU [Transportation Workers Union] partners to reduce costs, streamline processes, and keep the vast majority of our own aircraft maintenance work in-house. We have the technical expertise and depth of service to become the premier North American MRO [maintenance, repair, and overhaul] provider. This investment will enable us to further unlock the value in our MRO business and open the door for even more customers to experience our world-class, state-of-the-art technical services in a very competitive environment."

THE IMPORTANCE OF COMPETITIVE INTELLIGENCE IN THE M&E TURNAROUND

American Airlines' in-depth evaluation of its competition and dramatic reorganization of its people and operations was crucial to the carrier's survival during the financial crisis that gripped American and the rest of the industry beginning in 2001. American's foresight in venturing beyond a survival mentality, and looking beyond a stop-the-bleeding "tourniquet" approach, resulted in both survival and success. Many areas achieved significant cost savings, and the company emerged stronger organizationally and operationally than before.

Nowhere was this more evident than in its M&E operations. The department underwent a complete overhaul, and transformed itself into a best-in-class operation, which significantly improved efficiencies and revenues. As noted in the lessons-learned section of this article, these improvements manifested themselves in many aspects of the operations.

One example of this was in overall workflow. Art Anderson, a station manager in the Tulsa facility, said, "We have three major skills: avionics, cabin, and systems, including engines. There used to be times when one crew would really get ahead of another crew; it wasn't coordinated. Now we're working together. It standardized our work more;

we make better use of our resources and manpower, and we manage workflow down to a gnat's behind.”

Using competitive intelligence to examine direct and indirect competitors, third-party vendors, and best-in-class M&E operations outside the industry enabled American to view the complete spectrum of alternative opportunities. This supported the company's goal to fill gaps and become best in class. The competitive intelligence team learned new lessons from all these groups, and their learning was enhanced by the open-mindedness they brought to this project. No piece of learning was considered insignificant.

And the best-in-class goal meant exactly what it said — to be the unquestioned best provider in the industry. American's strategic objective to become a profit center in the M&E field required the company to learn how to be the most reliable as well as the most efficient airline M&E operation. This guaranteed the company the best performance for its own M&E needs, and enabled American to compete effectively for other third-party business.

The company applied psychological as well as mechanical lessons. An example was the “showcase” approach used with some of the changes to educate and motivate people outside that specific area. Dale Williams, Continuous Improvement Director and Shared Resources Manager at American's Tulsa facility, said, “A lesson we learned from Boeing was to take one area of the base, dedicate our resources, and make a huge change that everyone on the base could see, that people from other parts of the base could walk into and know something different is going on.” This tactic helped to energize people to develop other dramatic improvements in their own areas.

The learning process continues. The company now has a competitive intelligence team in Europe examining these same issues in detail, and following the same investigative approach that achieved such notable success in the United States. Future plans include repeating this process in Asia and Latin America. American is the world's largest airline, providing service to the Americas and Caribbean, Europe, Africa, the Middle East, and the Asia/Pacific regions. Both its internal needs and its third-party revenue potential with other customers represent a global opportunity.

Competitive intelligence played a vitally important role in American's turnaround in the M&E area. One of the primary benefits of studying other firms is that it enables companies to make dramatic changes because it gives people “permission to believe” in new directions and procedures that have been successful outside the company. Because of the severity of the airline industry's problems, they required fundamental changes. In some cases, cultural changes contradicted long-held preconceptions and practices. Dramatic changes are more easily sold to employees when they can see how these new approaches have been utilized successfully in other firms.

The changes in the M&E operations were particularly significant in that they impacted the key aspects of American's business: passenger comfort and safety, airline revenues, and faster, more efficient operations. The changes also generated an improvement in employee morale because people could keep their jobs and do those jobs more effectively. An internal memo summed up the company's progress in its M&E operations, and its “willingness to change”:

“The success achieved thus far is a tribute to American's employees. American's dramatic operational improvement is a direct result of its ongoing efforts to restructure its business and the willingness of everyone at American to accept change as an inevitable fact of life in the airline industry. But even though progress has been significant, much work remains. Everyone understands that it is important to continue focusing on finding ways to do their jobs more effectively and efficiently.”

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Cormac Ryan, president of TMA International, worked with Kodak, Nabisco, and three global advertising agencies prior to joining TMA. He has directed competitive intelligence and strategic planning projects in more than 25 countries. Cormac holds a BA in economics from Columbia University and an MBA in marketing from New York University (NYU), and for six years was adjunct professor of marketing at the NYU and Pace graduate business schools in New York. He has authored numerous articles, including “Knowledge Is Power” in the March/April 2004 issue of this magazine — an article that gave rise to the SCIP program series at UT Dallas. Cormac is located in Dallas, and can be reached at cryan@tmainternational.com.

CORRECTION TO JUL/AUG 2007 COLUMN:

“The 10 steps to selecting the right CI software” by Tanya Sewell, Cipher Systems, p36-38.

The Cipher website address should be www.cipher-sys.com.

Our apologies to Cipher Systems.