



AEROSPACE ACQUISITION 2001

May/June 2001



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Aerospace Acquisition 2001

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Transforming Our Work Culture

by Gordon Weiss, Major, USAF and
Mr. Harry Pape

In July 1997, the buzz was all about paperwork reduction, elimination, *paperless*-ness. The folks in OUSD (AT&L) working earned value management knew the value of digital data in the program management arena. The Deputy Secretary of Defense at that time, Dr. John White, directed the services and agencies to make digital operations the method of choice for all acquisition management and life cycle support information by the end of 2002. For the Air Force, SAF/AQX was given the stick and has been pursuing the integration of our digital environments ever since. There's still a long way to go, but we have made significant progress in the past four years. People are starting to believe that going paperless—or at least nearly paperless—can actually work. This watershed change in work culture is the product of many, many small steps.

After surveying the Single Managers to gauge how “digital” the community was, the Air Force Integrated Digital Environment (IDE) project began compiling the characteristics exhibited by the most creative and forward-leaning organization. “Walking the walk,” the team became an early and active user of the Alta Vista Forum (now SiteSpace) collaborative workspace and later incorporated the AFMC instance of LiveLink into its toolset.

Mrs. Darleen Druyun, Principal Deputy Assistant Secretary of the Air Force (Acquisition and Management), solicited willing participants and selected several as “IDE Innovation Centers.” These organizations signed a “contract” with Mrs. Druyun, agreeing to implement an *integrated digital environment* within one year. For its part, SAF/AQ agreed to provide support and remove impediments. Amazing things began to happen. The GATO/MC2 SPO at Hanscom AFB, MA, presented its April 1999 portfolio review at the Pentagon by navigating a web site it maintains at ESC. As unbelievable as it sounds, there were no Powerpoint slides! The ATS PGM office at Kelly committed to moving electrons and not paper as it prepared to relocate to Warner-Robins. Many more offices began the journey.

Along the way, it became clear that an overarching definition of the *integrated digital environment* was needed so that the activities could be focused toward a precise goal. The integrated digital environment now is defined as “a work environment where workers have immediate access to the information they need to do their jobs.” Three guiding principles are: 1) The creator/owner of information is the keeper;

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What's News?

We're Going Paperless!

Just as AA2001 reports on reform, the newsletter has taken on improvement initiatives of its own. As a result of these efforts, production time will be reduced allowing for the publication of more timely information. Starting with the Sep/Oct issue, AA2001 will only be available online. All printing of the newsletter will cease with the Jul/Aug 2001 issue.

All subscribers will be notified by e-mail when a new issue has been placed online. The AA2001 staff is working to ensure all current newsletter recipients will receive the electronic notification, but to aid us in our efforts, please fill out the online subscription form at http://www.safaaq.hq.af.mil/acq_ref/news.

PEO/SYSCOM Conference Date Change

The PEO/SYSCOM Commanders Conference is rescheduled for 23-25 October 2001 at Fort Belvoir, VA. This year's theme is "Acquisition Reform and the Road Ahead." Due to a new format and a new administration, this year's conference promises to stand out from those in the past. The highlight of the event will be a Wall Street panel discussion. For more information, please contact Mr. Thomas Kearney at DSN 425-7156, Comm (703) 588-7156, or via e-mail at thomas.kearney@pentagon.af.mil.

A&LR Week Name Change, Date Change

Acquisition and Logistics Reform (A&LR) Week is now Acquisition and Logistics Excellence (A&LE) Week. A&LE Week has been rescheduled for 10-14 September 2001. For more information, please contact Maj Ross McNutt at DSN 425-7278, Comm (703) 588-7278 or via e-mail at ross.mcnutt@pentagon.af.mil.

DSMC Alumni Association Symposium

The DSMC Alumni Association 18th Annual Symposium "Partnership in Progress" will be held 5-7 June, 2001 at Ft Belvoir, VA. For more information, visit <http://www.DSMCAA.org>.

Air Force 'Aims High' with Reverse Auctioning Strategy

Is it possible that a new spin on an ancient technique could really be the latest innovation in acquisition? Several Air Force buying offices recently have experimented with an innovative pricing approach that has gained high visibility in the commercial environment. Online "Reverse Auctioning" (RA) is a means of using an internet-based application to bring buyers and sellers together to conduct business electronically. The practice has created a great deal of buzz in industry, and that excitement has spread to the Department of Defense. Savings averaging two to 20 percent routinely have been reported with its use, and supporters and detractors alike have had much to say about the practice. The Air Force has now conducted 13 reverse auctions, with an average savings of 18 percent.

As opposed to a traditional auction in which the seller receives and compares offers for his goods, a reverse auction allows the buyer to publicize his needs. Competitors who are able to satisfy the buyer's needs offer to sell their service or product in iterative price decrements. Through the use of direct competitive pressure, prices often are driven lower than the historical best price. Throughout the process, several parameters are used to maintain fairness. First, offerors' identities are masked during the web-based bidding war, but their prices are available for all competitors to see. Second, a set time is available to conduct the auction. Third, an offer placed within the last five minutes of the auction will automatically extend the event another five minutes, during which all offerors can continue to sharpen their pencils and lower their bids. This process can continue in such a way that an auction scheduled for 30 minutes can often last several times longer.

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The opinions expressed in this newsletter are not necessarily those of the United States Air Force, its employees or subcontractors.

Acquisition Success Story

by Brad Turpen, Capt, USAF

Program Summary

Joint STARS, a low-density, high-demand, airborne weapon system designed to provide near-real-time surveillance and targeting information on moving and stationary ground targets, is modernizing to take maximum advantage of commercial equipment. The Computer Replacement Program (CRP) upgrade for Joint STARS provides commercial off-the-shelf-based replacements for central computers, operator workstations, Radar Airborne Signal Processor (RASP), Local Area Network (LAN) and related peripheral equipment. The recently completed 37-month CRP Engineering and Manufacturing Development (EMD) met all development objectives and will be fielded on the entire Joint STARS fleet. CRP has established a new baseline configuration that will make dealing with the problem of diminishing manufacturing sources easier and will reduce system life cycle costs. Use of commercial equipment within an open architecture will facilitate future upgrades.

Program innovations include software implementation of functions previously done in hardware, the creation of a single software baseline for both the air and ground segments of Joint STARS, a new rack design to accommodate commercial equipment within the airborne environment, and a combined development and operational test process. Valuable lessons were learned in applying streamlined acquisition processes in the migration from the existing design to an open architecture and in ensuring early operational tester involvement.

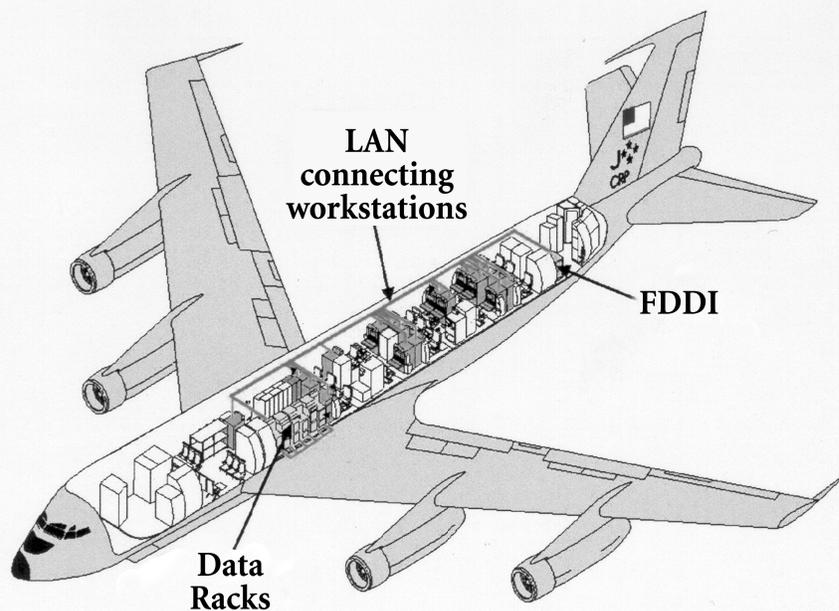
System Description

Hardware—The existing E-8C computing infrastructure, a MIL-VAX-based five-computer architecture and four radar programmable signal processors, was upgraded to a simpler, dual computer architecture based on commercial processors. The CRP architecture comprises two central computers and

two RASP computers, both types configured as one active and one redundant back-up. A star-configured, switched Fiber Optic Distributed Data Interface (FDDI) network and a LAN hub that employs cross-bar switch technology replace the copper, dual-ring, 10baseT Ethernet operator workstation LAN providing a major increase in network capacity. A LAN bridge provides Ethernet-to-FDDI connectivity required to connect subsystems not modified by CRP to the central computers. The central computer mass storage device, an array of removable disk modules, dramatically increases disk storage from the previous design by utilizing 36 GByte drives to replace the existing one GByte drives. In the 18 operator workstations, commercial computers replace the existing militarized processors. Removable disk modules, keyboards, mouse and display have been replaced by commercial devices.

New data racks are designed to accommodate commercial equipment within the airborne environment, addressing shock, and vibration and ElectroMagnetic Interference (EMI). To maintain maximum flexibility for future upgrades

and to minimize the cost of the racks; shock, vibration and EMI were considered at the rack level and not the "box" level. Vibration/shock dampers were used to isolate commercial equipment, and crash loading was addressed by designing the racks to restrain equipment and provide operator safety. Metal racks employed EMI door filters



Computer Replacement Program Modifications

and gaskets and shielded cable troughs to provide the required attenuation to address radiated emissions. A draw-through cooling system was implemented in both data racks and operator workstation consoles to address convection cooling requirements of commercial equipment.

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Reducing Acquisition Response Time

Cost of Delay Analysis: Determining the Value of Time

by Ross McNutt, Major, USAF

A major goal of Air Force acquisition reform is to make acquisition systems faster and more responsive to the changing needs of the warfighter. Reducing acquisition response time—the period from when a technology is developed, a threat emerges, or a strategy is changed until the acquisition system can respond with equipment for the warfighters—is a key factor in maintaining a competitive edge.

Today long acquisition cycles (on average, 11 years for ACAT I and 6 1/2 for ACAT II and III programs) mean equipment is often not available when needed. It also results in increased development and production costs, less advanced technology in fielded systems, and higher operation and support costs.

In an effort to reduce the acquisition response time, SAF/AQ and AF/IL established a Cycle Time Reduction Team in 1998 to address these issues. The VCSAF-approved plan identifies steps required to dramatically shorten acquisition cycles.

The first step is to determine the value of time on acquisition programs and to understand which aspect of a program would increase its value most to the Air Force—system performance, lower acquisition costs, lower operational costs, or shorter schedules. As a result, the Cycle Time Reduction Team adopted a method known as Cost of Delay Analysis (CoDA) from the commercial industry.

Mr. Don Reinertsen, then of McKinsey & Company, developed CoDA in 1983. By quantifying the value of time, he showed that for many projects time was by far the most important factor in increasing value. He identified in an often-cited *Harvard Business Review* article that as little as a six-month schedule delay could result in a loss of 33 percent of potential project profits. In addition, Mr.

Reinertsen found that in commercial industry intuition was a poor estimator of the value of time. Mr. Reinertsen found that if you ask people on the same project the value of a month of schedule, the answers vary by factors of 50 to 80. This leads to inconsistent decision making by different people and leaders on the project. He found that you have to actually do the analysis to truly understand the value of time.

With the assistance of Mr. Reinertsen and support of OSD(AT&L)AT, the Air Force team adopted CoDA for use on defense projects. Instead of trying to maximize profits, DoD worked to maximize value. Value was defined as the total benefits of the project minus total costs.

CoDA is a relatively easy method and most projects can be completed in as little as four to six hours. There are four main steps to applying CoDA:

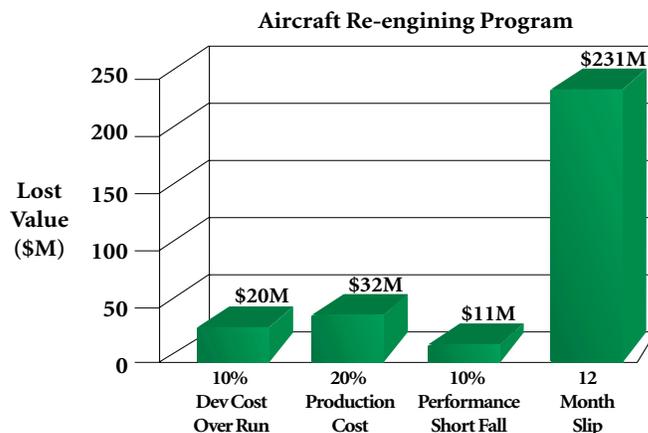
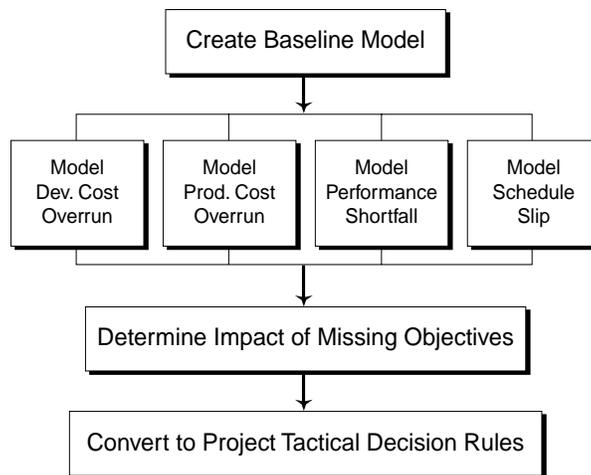
First, a baseline economic model of the project is created. Here you identify the costs and the benefits of new and existing systems over time. Much of the information can be obtained from existing program documentation. Benefits are estimated using a variety of techniques, including the rational warfighter or comparative analysis.

After identifying project costs and benefits, the value can be estimated. This economic value model is limited to a single sheet of paper.

Second, likely changes to the program such as a production or development cost overrun, shortfall in system performance and a schedule delay are modelled.

Third, the baseline model is compared to the changes to determine the impact of the changes on the value of the project.

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Acquisition Reform Brings Results for Aeronautical Systems Center

by Paul Rankin, Lt Col, USAF

The Aeronautical Systems Center (ASC) has taken acquisition reform to heart with great results. By taking the time to refine their processes and to figure out where they're going in order to get there effectively and efficiently, ASC has shortened lead times, saved money and done more with less—as today's defense business environment demands. The ASC provides several case studies on the practical use and achievements of acquisition reform initiatives.

B-1 Conventional Munitions Upgrade Program: In awarding three major upgrade contracts, the B-1B System Program Office (SPO) reduced the number of contractually required Military Specifications and Standards, shortened the Contract Data Requirements List and worked with its prime contractor to streamline remaining documentation. By reducing unnecessary paperwork and emphasizing insight versus oversight, the SPO reduced contract and program lead times.

F-15 Projects Team: The F-15 Program Office has implemented effectively the Active Electronically Scanned Array radar upgrade by making use of an Integrated Product Team (IPT) that established performance-based specifications and payments, a single integrated schedule and risk management plan, and a streamlined payment process through Defense Finance and Accounting Services. The IPT's strategies saved \$15 million in data requirement and \$2.25 million in operational test. They saved time, completing an aggressive 10-month flight test on time and preserving their production timeline. The program also met all Operational Requirements Document (ORD) thresholds and beyond by achieving 10 of the 17 ORD objectives.

Precision Attack Targeting System (PATs) Pre-Award Initiatives: To capitalize on industry's technological expertise and to reduce Request for Proposal (RFP) paperwork, the PATs program office team maximized industry involvement throughout the acquisition process. Full and open information flow between the program office and industry was ensured by four Industry Days during the pre-award process. Industry also was invited to visit Guard and Reserve bases that would use the system and to attend acquisition strategy meetings held by ASC to define the program. Before formal release of the RFP, industry was given opportunities to review it and comment. Following the contract award, the winning contractor participated with the government team in a

joint, integrated product team risk assessment. As a result, the \$300 million contract was awarded only 90 days after the RFP release. The source selection was completed ahead of schedule, the contract award was made without discussions, and no contract protests were received.

F-22 Performance Based Payments: The F-22 System Program Office (SPO) was challenged to field a better, faster and more cost-effective aircraft in its development contract. The SPO responded first by deleting approximately 80 percent of the military standards and specifications from the contract. Next, the SPO converted its contractual agreement of acceptance of drawings to a performance-based contract accepting the development aircraft, allowing increased flexibility to demonstrate flight test capabilities on individual aircraft.

While ASC has its own success stories in acquisition reform, it also has been an effective supporter of Air Force-wide initiatives. For example, the Air Force Materiel Command established a focused Product Support Business Area (PBSA) to develop, acquire and support aeronautical weapons systems for the Air Force. The ASC applied its existing management model, Value Chain Analysis, and adapted it for use in a PBSA environment.

ASC also has also been an innovator for the PBSA environment. It was selected to establish pilot programs to test the feasibility of implementing their use of Activity-Based Costing (ABC), a process that allows managers to determine the actual cost of product development activities and use the information to manage effectively their operations. ABC now is being implemented Command-wide. ASC also has launched a Cycle Time Reduction Award Program to support its goal of 50 percent reduction in time, resources and costs expended Center-wide. ASC's commander set aside a \$90,000 award pool, and 44 teams competed in the initial award period.

ASC is improving its pre-award processes by including for every program an Early Strategy and Issues Session to screen preliminary acquisition strategy alternatives and review program issues. This session often will involve the Center's Senior Acquisition Team, the ASC Commander's principal acquisition advisers, and the ASC Acquisition Support Team (AST), a team of acquisition process experts. All ASC programs valued above \$10 million must use AST support.

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Reverse Auctioning

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Reverse auctioning requires a customer, a group of vendors willing to compete against each other, and an “enabler” that serves as an intermediary. The enabler makes its web-based software available on a fee-for-service basis, with the cost typically borne by the customer. Enablers offer varying levels of service, from very simple “do-it-yourself” access to their web site, to very complex exchange-type services requiring membership and offering financial services, logistics support, and access to many niche-type suppliers. Popular enablers include Ariba, FreeMarkets, eBreviate and Commerce One.

Supporters of the process claim RA allows real-time collection of marketplace data, which provides a better understanding of pricing trends. Suppliers who have participated in RA appreciate the “transparency” of the process, which allows them some level of comfort and confidence in knowing that the government is not simply selecting its favorite suppliers. All supporters cite the benefit of dropping prices; however, detractors claim that pitting suppliers against one another is similar to watching hand-to-hand combat and unravels all the years of work spent building a relationship-based environment with our supplier base. Detractors also cite the emotional nature of an auction, which casts doubt on the fidelity of the process.

In an attempt to look beyond the “buzz” of RA, the Air Force’s senior contracting staff (SAF/AQC) looked into industry’s use of the tool to determine whether any industry lessons

could be applied to the Air Force. The SAF/AQC staff collected data from several large firms that have successfully used RA as a pricing method as well as several enablers who provide reverse auction services to the commercial marketplace.

The general consensus from industry was that RA, like any other procurement tool, must be part of an integrated strategy tailored to the immediate acquisition at hand. Successful users cited advanced preparation and detailed market research as the key precedents to success. Other common factors noted among successful users include crisp, easily comparable requirements; a firm commitment from management to switch suppliers if cost beneficial; and numerous competitors willing to engage in head-to-head competition.

A review of the FAR by SAF/AQC revealed that there is very little in the way of regulatory or statutory roadblocks prohibiting the use of RA. Consequently, the team seized the opportunity to reemphasize the already existing guidance found at FAR 15.402: Regardless of the method of acquisition or pricing strategy used, the contracting officer has the obligation to ensure the government purchases supplies and services from responsible sources at fair and reasonable prices. This means that price analysis remains vitally important, as does ensuring the ability of our selected suppliers to perform their contractual obligations. The full text of the group’s analysis will soon be available on the SAF/AQC home page (<http://www.safaq.hq.af.mil/contracting>). Data from previous reverse auctions, along with lessons-learned and helpful tips will also be available at this site.

All three Services have stepped into the RA game over the past year with winning results and have successfully used industry enablers and “do-it-yourself” applications to conduct their auctions. The Air Force has partnered with the Army’s Communications-Electronics Command (CECOM) to enter into a licensing agreement with Frictionless, a Cambridge, Massachusetts company. Over the next year, Air Force buying offices will be able to use Frictionless software to conduct reverse auctions free of charge. However, these offices will not be precluded from obtaining the services of other enablers if desired. GSA’s web site, <http://www.buyers.gov>, makes obtaining those services painless.

RA is shaping up to be a very interesting practice that deserves the Acquisition community’s attention. SAF/AQC has helped set the stage for the Air Force’s adoption of reverse auctioning as a new tool to drive the warfighter’s costs down. Keep your eyes open for more on this interesting approach.

Aeronautical Systems Center Gets Results

(Continued from page 6)

A market analysis and pricing Center of Expertise (COE) has been established to assist program offices in market surveillance and investigation requirements under Federal Acquisition Regulation Parts 10 and 12. To capitalize on ASC technical experts, the COE has designated four Market Research Center pilot programs: Engines, Trainer Aircraft Simulators, Commercial Aircraft and Life Support Systems.

ASC has developed numerous tools to better serve the warfighter through cost-effective acquisition of quality weapons systems. The Center has applied acquisition reform strategies for effective results.

Transforming Our Work Culture

(Continued from page 2)

2) Reporting is replaced with access to information; 3) The essential evidence is preserved for reuse by others.

The AF IDE project concluded at the end of last year. Being ardent practitioners of the digital arts, the team had been sharing its knowledge on the AF IDE website (<http://ide.hq.af.mil>). Its legacy ("What we know") can be found there. This Knowledge Store is a rich resource for anyone interested in transforming their work and their workplace.

As if the IDE project were the "crawl" in the "crawl, walk, run" learning curve, its success led to an aggressive "walk" stage with the formation of a Work Culture Transformation Board last

fall. Functioning in a manner similar to a private foundation, this group was charged by Dr. Lawrence Delaney, Assistant Secretary of the Air Force (Acquisition), with implementing the conclusions drawn in the IDE project. Chaired by Mr. Blaise Durante, the board consists of the Executive Directors of the various AFMC product, logistic and test centers, AFMC's Executive Director, the HAF Associate Director of Maintenance (USAF/ILM) and Dr. Deanna Marcum, the president of the Council on Library and Information Resources.

Mr. Durante has offered, as a focusing construct for the Board's work, the Cycle of Change presented in David Nadler's book, "Champions of Change" (©1998, Jossey-Bass Publishers). This graphic helps place the Board's field of maneuver in a larger context of change in turbulent times. The Board is in the process of developing a clear vision, mission and themes it will promote. The evolving vision includes the following thought: "Bring the e-revolution to our people." Soon, we'll be done "walking" and be ready to "run." Stay tuned as this process moves forward and get involved.

Cost of Delay

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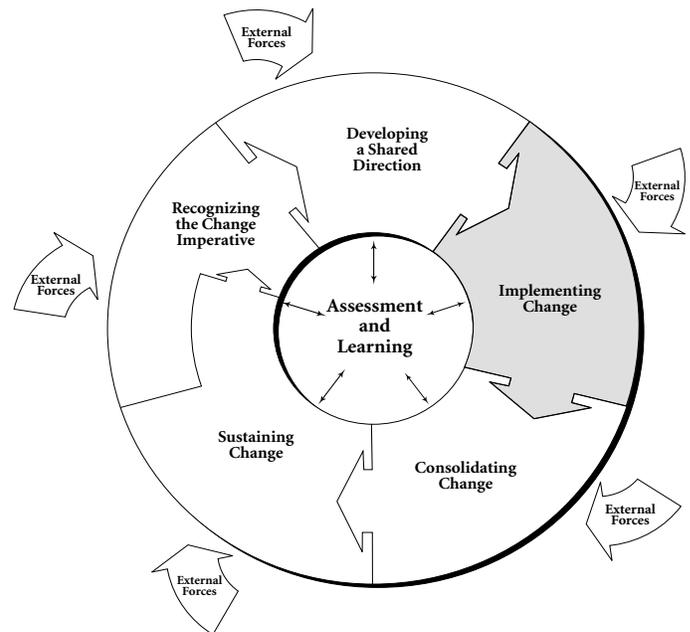
This is essentially performing sensitivity analysis on each aspect of the project.

Finally, the results are converted to tactical decision rules that help program managers and decision-makers to increase a project's value in a wide range of situations. These decisions include making cost, schedule and performance trades; defending against or adjusting to budget changes; and developing incentives for program personnel and contractors.

A team of Air Force reserve officers applied the CoDA method to a range of projects and found that it applies to a wide array of aircraft, missile, electronic and software programs. They observed that it is typical to significantly underestimate the value of time on projects. The team also demonstrated how CoDA could support program milestone decisions and budget exercises.

CoDA is an easy method to help determine the value of time on your program. Training material is available and formal course work is being developed.

Understanding the value of time and CoDA is only the first step in reducing the acquisition response time. Other team efforts include adoption of Evolutionary Acquisition and Spiral Development, time-based and time-phased requirements, schedule development and evaluation tools, effective schedule related incentives, and effective portfolio management. Additional information on all of these topics can be found at the Air Force Cycle Time Reduction web page at http://www.safaq.hq.af.mil/acq_ref/cycletime.



Meanwhile, the Board is determined to remove impediments to progress. Many of the conclusions of the IDE project involve significant changes to existing policies and practices. Too often, we still rely on outdated, paper-based processes. Fortunately, the Board members are in positions with authority to change or influence policy and cultural practices. It is incumbent upon all of us who toil in the acquisition trenches to identify the barriers to changing the work culture. Clearly the technology is at hand. It's the business rules that have not caught up. Please write to the Board at wctb@pentagon.af.mil with any impediments that need to be dynamited!

Towards Organizational Success: A Focus on High-Quality Leader-Member Exchange

by Dr. Yolanda B. Truckenbrodt, Major, USAF (Ret)

(Editor's Note: The article is an adapted version of the research article by the author, published in Acquisition Review Quarterly, Summer 2000 issue, pp. 233-244)

In today's globally competitive, fast changing technological world, the leadership challenge is to foster commitment and citizenship behavior within employees despite the harsh realities of downsizing, restructuring, job cuts, fewer promotions, constant moves, and "doing more with less" in the workplace. The possible effects of such uncertainties are employees' absenteeism, low job performance, tardiness, and turnover. Thus, it is important for management to understand the critical role of commitment and citizenship behavior among the workforce.

Commitment is an attitude of "company loyalty." It stems from the employee's personal belief that the organization's missions, goals and values are congruent with their own (Nystrom, 1990). It is a feeling of "identification and belonging," wherein the employee exerts substantial effort "over and above" what is required for the success of the organization. Research shows committed employees are less likely to leave voluntarily, have low turnover rate, low absenteeism, and high performance (Ostroff, 1992).

Citizenship is discretionary behavior on two dimensions: 1) Altruism is behavior performed in helping a specific co-worker, a customer or a supervisor, not normally expected of the employee since it is not part of the employment contract (e.g., training a new employee, sitting-in for a sick coworker, or answering the phone when the secretary is away). 2) Compliance is behavior employees are expected to perform (e.g., arriving to work on time, not taking too many coffee breaks, taking only the required lunch time, or not leaving early). Empirical evidence shows citizenship behavior improves the effectiveness of the organization by the high degree of group performance in terms of quantity and quality of work output (Podsakoff et al., 1997). Thus, in order to maximize the efficiency of any organization, it is crucial to understand attitudinal commitment and citizenship behaviors in the workplace.

There is considerable research to suggest that the above two variables are the outcomes of quality interpersonal interactions between supervisors and subordinates, known as the Leader-Member Exchange (LMX) theory of leadership developed by

Scandura and Graen, 1984. LMX is a two-way relationship (dyad) between supervisor and subordinate, and the quality of exchange varies because the supervisor has limited time and resources. Subordinates with high-quality relationships with supervisors can be counted on to perform unstructured tasks, to volunteer for extra work and to take on additional responsibilities. In contrast, in the low-quality exchange, subordinates perform only in accordance with the prescribed employment contract. Research has consistently shown that LMX is positively correlated with turnover, support for innovation, performance and productivity. Therefore, the following recommendations are offered to supervisors to attain high-quality relationships with subordinates:

- Clearly state the goals, mission, and vision of the organization and, most importantly, the role each subordinate contributes to operations. A culture that provides such awareness instills a sense of belonging and a positive feeling of identification with the organization.
- Be aware of the importance of positive role-image and the type of formal and social interactions you form with subordinates. Pay particular attention to personal judgment not based on merit or performance. When employees perceive they are treated fairly, they tend to voluntarily engage in citizenship behavior (Organ, 1988).
- Attend leadership training, emphasizing the importance of mentoring, human relations skills, joint development of goals and effective interpersonal communications.
- Provide equal training and career development plans to all your subordinates and recognize each employee's potential and capabilities to encourage an organizational culture of growth and innovation. Subordinates should be afforded self-development training to increase their knowledge, skills, professional growth, and self-confidence on the job.
- Initiate team-building programs (e.g., employee of the month, branch or division of the year, verbal praises, three-day weekend pass) to reward employee performance, increase group morale, and improve office effectiveness.

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The Fourth S&T Affordability Conference 'Technology Transition for Affordability'

Senior Science and Technology (S&T) leaders convened in Falls Church, Virginia on 12-13 March, 2001, to share affordability best practices, lessons learned, and possible actions to improve the current technology transition process. Sponsored by the Deputy Under Secretary of Defense for Science and Technology and the DoD S&T Affordability Task Force, the 2001 S&T Affordability Conference included a broad segment of the S&T, acquisition, and industrial communities, with the objective to find what works and what does not work.

Allen Beckett, Acting Deputy Under Secretary of Defense for Logistics and Material Readiness, opened the conference by discussing the interrelated missions of S&T and Logistics. In his view, the theme of the conference should be "Technology Transition for Affordability and Supportability." Mr. Beckett said there is a need to "improve the dialogue and communication between the S&T, acquisition, logistics, and industry communities. Our challenge is to make this transition among the communities as seamless as possible."

Leader-Member Exchange

(Continued from page 9)

- Build a corporate culture in which open two-way communication at all levels is encouraged, and establish a sense of trust in the exchange relationship.
- Create a team environment where all the players are working toward jointly developed common goals.
- Actively encourage subordinates to provide feedback and vice-versa. A plan of action, follow-up and progress report should also be established during feedback sessions.

An increased awareness of building strong relationships between supervisors and subordinates is a necessary part of organizational planning. A greater understanding of employees' attitudes and behaviors is important for management executives in policy-making, and for human resource specialists to shape future strategies and training for the benefit of the organization.

For the list of references, please see the full article at http://www.safaq.hq.af.mil/acq_ref/news/mayjun01/index.cfm.

John Douglas, President and CEO, the Aerospace Industries Association of America, gave a keynote address on the industry's view of affordability and transition. He said that in the Post-Cold War era, DoD lacks a "paradigm" to set defense policy, coupled with growing demands on our military. Because of the constant threat during the Cold War, Mr. Douglas said, "our acquisition system is not designed to support affordability per se, it is designed to produce performance." However, he said, we are now increasingly looking at ways to reform the acquisition process, particularly through commercial/military integration.

Colonel Thomas Kelly, Project Manager, Night Vision/Reconnaissance, Surveillance, and Target Acquisition, gave the customer's perspective on affordability. Colonel Kelly gave four principles in managing affordability: 1) consolidate sensor business, 2) repeat affordability successes, 3) push HTI programs (transformation), and 4) manage money, not processes.

The conference included panels from each Service demonstrating S&T best practices, including the Air Force's "Integrated Panoramic Night Vision Goggle Program." Jeff Craig, Program Manager, Air Force Research Laboratory, said the program was able to expand the night vision goggle field-of-view by 160 percent, while meeting its objective of affordability. "The ultimate goal of the Night Vision Goggle Program," said Mr. Craig, "will be the warfighter's use of daytime tactics at night." The conference also included exhibits on the Night Vision Goggle Program and the Raven Optical Sensor program from the Air Force Research Laboratory, Maui.

Other panels included "Commercial Industry Transition Process," "Research and Development View of Affordability," and "S&T Executives View." Dr. Delores Etter, Deputy Under Secretary of Defense for Science and Technology, presented the 2001 S&T Transition for Affordability Award to the Army's Guided Multiple Launch Rocket System.

The fourth S&T Affordability Conference provided an excellent forum to improve the dialogue concerning how DoD might better field critical technology at the lowest cost. For more information on the conference, including presentations, go to <http://www.affordability.org/>.

Acquisition Success Story

(Continued from page 4)

Software—CRP software development was a major effort that required the re-hosting of the entire operational software, including high speed radar signal processing functions, into new commercial computer environment. Software development is within budget and on schedule by methodical spiral implementation of functionality accompanied with rigorous lab testing. Development testing was streamlined by making use of contractor-format procedures and informally witnessing lower-level testing. This testing was conducted in the aircraft-representative system laboratory using weekly software releases. This approach made use of cooperative developers and testers working side-by-side to rapidly find and fix problems. The “weekly build” approach reduced the risk that a single change would have a significant negative impact. This approach was particularly effective in the final stages of the formal test program.

The CRP software development team merged the existing Joint STARS software baseline with the software modifications required to re-host on Alpha-based computers. To create a new “Single Software Baseline” (SSB), unique features of the existing ground support system were included in the merge, making it possible to build a system disk from the SSB that provides the Joint STARS CRP system environment in both aircraft and ground-based support and training systems. This is a breakthrough in Joint STARS software sustainment. It enables software changes to be made simultaneously in both aircraft and ground systems, elimi-

nating costs and schedule delays of implementing future changes into separate airborne and ground modifications.

CRP implemented requirements in software vice hardware for the radar pulse compressor and preprocessor, precluding the problem of component obsolescence while saving weight, power and space on the aircraft. This was made possible by the increased processing capability of modern commercial computers.

Development Test (DT) and Operational Test (OT)—The CRP test program successfully combined DT/OT testing to reduce costs and provide early feedback on the operational effectiveness and suitability of the system to development and user personnel. Although the CRP test program was successful, identifying OT objectives prior to contract award would have enabled early planning of required sorties and resulted in further efficiencies.

Conclusion

The Joint STARS CRP EMD program accomplished all of its objectives: minimized E-8C per-unit and life-cycle costs; significantly expanded the open-architecture concept by leveraging the latest off-the-shelf commercial technologies; and increased system performance, capabilities and capacities for cost-effective future plug-and-play and pre-planned product improvement (P3I) upgrades. Numerous design and acquisition streamlining innovations were applied and lessons learned will have application beyond the CRP EMD program.

Trivia Corner

To test your knowledge of military trivia, two trivia questions appear in each edition of *Aerospace Acquisition 2001* (AA2001). One question will be published in the printed newsletter; the other will be posted on the AA2001 newsletter web site at www.safaq.hq.af.mil/acq_ref/news/.

Please send all responses by e-mail to arnews@pentagon.af.mil. When more than one correct response is received, the winner will be determined by the date and time of the response.

Winners will be announced in the following edition of AA2001. Each winner's name will go into a drawing to be held at the end of the calendar year for the grand prize—a \$50.00 gift certificate. Good luck to everyone!

Last Issue: **Who commanded the 82nd Airborne Division for Operation Market Garden?**

Answer: Col Maxwell Taylor

WINNER: NO RIGHT ANSWER RECEIVED

QUESTION: **WHO WAS THE FIRST ENLISTED AVIATRIX (HINT: ARMY, 1917)?**



Get Published

Aerospace Acquisition 2001 is a bimonthly newsletter published by the Office of the Assistant Secretary of the Air Force (Acquisition). The purpose of the newsletter is to disseminate information pertinent to the professional development of the Air Force Acquisition and Logistics Workforce.

Subject matter may include, but is not limited to, professional development, acquisition reform, acquisition and logistics program accomplishments, technology developments, and policy guidance.

Articles must be no more than three double-spaced, typed pages. Photos may be black and white or color. Please submit illustrations in separate files from text. Photos and illustrations will not be returned unless requested. All scanned photos and illustrations must have a resolution of at least 300 dpi, or prints of all photos may be submitted via U.S. Mail, FedEx, etc.

All articles must be cleared by the author's security/OPSEC office and public affairs office prior to submission. The cover letter accompanying the article must state that these clearances have been obtained and that the article has command approval for open publication. Offices and individuals submitting articles that report Air Force savings must be prepared to quickly provide detailed documentation upon request that verifies cost savings. Authors are requested to include a short biographical sketch.

Submission dates:	<u>Issue</u>	<u>Author's Deadline</u>
	January/February	10 November
	March/April	10 January
	May/June	10 March
	July/August	10 May
	September/October	10 July
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To submit an article, please provide manuscripts (MS Word), illustrations (EPS or 300 dpi TIFF or JPEG scans) and photos (glossy prints or 300 dpi TIFF or JPEG) via e-mail at arnews@pentagon.af.mil or on a 3 1/2 inch floppy disk or a 100-MB ZIP disk via U.S. mail to SAF/AQXA, 1060 Air Force Pentagon, Washington, DC 20330-1060. All submissions must include the author's mailing address and office phone number (DSN and commercial).

Aerospace Acquisition 2001 reserves the right to edit for publication style and clarity.



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