

MAY-JUNE 2003



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PROGRAM MANAGER

FROM MALIBU TO BAGHDAD—
PERSPECTIVE OF A PM FROM THE WARFRONT

Spiral Development and the F/A-18 Aircraft



*Rear Adm. (Sel) Jeffrey A. Wieringa, USN
Program Executive Officer,
Tactical Aircraft Systems, NAVAIR*

Parallels from the past emerge in
spiral development of the F/A-18A
through F Variants.



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IT ACQUISITIONS**

**“EXCALIBUR” APPLYING UNIQUE
DECISION SUPPORT TO EXPLOSIVES
SELECTION**

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“SHADOW” TUAV PROGRAM**

**PATRIOT DIAGNOSTICS SUPPORT AT
REDSTONE
ARSENAL**

*Program Manager Interviews Diane Morales
Deputy Under Secretary of Defense
(Logistics & Materiel Readiness)*

PROGRAM MANAGER

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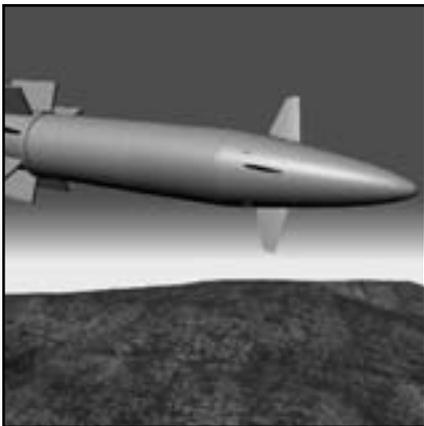


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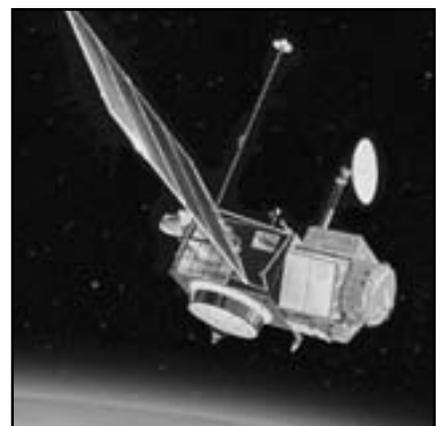
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Diane Morales

Deputy Under Secretary of Defense (Logistics and Materiel Readiness)

From the Customer's Customer to the Supplier's Supplier, Logistics Today is about Processes, Enabling Technologies, and Well Trained People

Professor Randy Fowler, Director of Logistics and Sustainment, DAU Curricula Development Support Center, interviewed Diane Morales on behalf of Program Manager on June 10. Morales spoke with Fowler from her Pentagon office, offering a personal perspective on logistics support to the combatant commanders and describing how DUSD (L&MR), under her vision and direction, is transforming to meet the logistics needs of the nation's warfighters in the most efficient manner possible. Preceding the interview is a "State-of-the-Union"-type message from Morales on Department of Defense Logistics today.

Today, our nation faces a stern test from a new kind of enemy. The War Against Terrorism has challenged us to re-energize our planning—and to step up our pace of transformation. We must therefore accelerate our initiatives to change the way our military forces do business. And logistics has an even more critical role to play. Our resolve to defend democracy has never been stronger, and transforming the way we approach our work in logistics and preparedness has never been so urgent.

The Quadrennial Defense Review (QDR) is the Department of Defense (DoD) blueprint for transforming our forces to defeat 21st century threats. It defines strategic imperatives for all military operations across a 20-year horizon with specific requirements for DoD logistics, including:

- Project and sustain the force with minimal footprint.



“I came back to the Pentagon, to my current position, to improve the way we provide logistics support to our forces in the field. My highest priority is to do everything in my power to provide the best support to our operational commanders, so they can achieve their vital missions armed with the most advanced technologies we can create.”

- Implement performance-based logistics to: 1) compress supply chains, 2) improve readiness for major weapon systems, and 3) improve availability of commodities.
- Reduce cycle times to industry standards.

The Future Logistics Enterprise (FLE) is DoD's near-term logistics transformation strategy. FLE aims to transform the logistics operation of the military into the most advanced synergistic collaborative supply chain in the world. This integrated logistics capability will provide advanced, operationally effective weapons and logistics support to the warfighter in the most efficient manner possible.

The Quadrennial Defense Review tasked us to provide our combatant commanders with logistics support to enable forces to deploy anywhere in the world within 96 hours. This meant that we had to bring our supply chain readiness to a state that would allow the combatant commander to follow up with a major joint force deployment, in theater and ready to engage in less than two weeks. This transformation enables logistics to become a “competitive advantage” to our warfighters, much like Wal-Mart and other commercial firms have consciously focused on enhanced logistics as a weapon against their competitors.

We still are working these issues—our deployment to Afghanistan took about 23 days. We need to cut that in about half. Our advances in planning and increased ability for coordination enabled us to enter Baghdad on Day 20. By accurately forecasting the demands on the logistics support mechanisms during the pre-deployment, deployment, and sustainment phases, we were better positioned to provide time-definite support to our warfighters rather than relying on the traditional “just-in-case” materiel build-up.

In order to succeed in deploying within 96 hours, we had to first create the high-level view of what the warfighter needs for support. In commercial terms this



“Future Logistics Enterprise [FLE] is the transformation of the way America fields its weapons systems, supplies our troops, and projects our power so that we can win wars... The DoD has never undertaken such a significant transformation.”

is called the end-to-end supply chain. This supply chain extends from the customer's customer to the supplier's supplier and includes processes, enabling technologies, and well-trained people.

The acquisition community is critical to our success in logistics. Implementing Total Life Cycle Systems Management

processes builds into the acquisition process the accountability and responsibility we need to provide end-to-end customer service to our warfighters.

Q *Logistics has certainly been prominently featured in Operation Iraqi Freedom [OIF]. How has/did the coalition logistics system perform?*

A During our deployments to Afghanistan and Iraq, the world has again seen the *resounding success* of our planning for joint operations—and it has begun to see the improvements that our drive for logistics transformation are making possible.

The quick victory by our forces in these two crucial battles within the larger War Against Terrorism has been truly impressive. It has proven that both our battlefield tactics and our strategic vision are succeeding. Our program to transform America's armed forces—creating the most *mobile*, most *agile*, most *effective* fighting force in history—is helping us meet America's new global responsibilities.

In preparing our armed forces for the challenges they will face, transformation is in the forefront of our agenda—and transforming logistics is a central part of that process.

Q *The Department has been preparing for this type of battle since Desert Storm. What logistics changes resulting from the last decade's logistics transformation have had the most notable impact on military operations in Iraq?*

A It was gratifying for the logisticians to see the success of the programs we have been developing and implementing since the first Gulf War. In Operation Iraqi Freedom, we used a streamlined approach to logistics, analyzing how long it takes us to get supplies from the port to the frontlines, and from there determining how many days' supplies we needed to maintain.

In Iraqi Freedom, U.S. forces kept five to seven days of supplies on hand. This can be contrasted with the 60 days of supplies we had on hand during the first Gulf War.

Another difference was the use of technology. U.S. forces maintained a “digital awareness” over logistics support during OIF. We had greater visibility of where supplies were going and we could redirect them if necessary. We were much more certain in terms of logistics capabilities and connectivity in theatre than during Desert Storm. The implementation of computerized ordering and tracking offered significant advantage for us.



What are the lessons learned in Operation Iraqi Freedom with regard to logistics?



We are all eager to have the specifics regarding lessons learned from OIF, but it's too early to be able to provide that detail. In fact, we currently have plans to begin the study of lessons learned and are anxious to begin this discovery, as we believe we will be able to attribute many of the recent successes to programs we have implemented, such as Performance Based Logistics, Total Life Cycle Management, and others.

One thing we did learn was the speed with which our troops were able to adjust tactics and capabilities. Much of the support that we have begun to build into the system for maintenance and ensuring mission capability for weapon systems was demonstrated in OIF.

Additionally, we had logistics professionals working alongside the warfighters so that we would have first-hand, real-time visibility into the logistics requirements—as they occurred. This effort put our logistics organization closer to the end customer during battle—the warfighter.



For future operational scenarios, what are the primary challenges confronting our logistics system? As you know, since you have



“In preparing our armed forces for the challenges they will face, transformation is in the forefront of our agenda—and transforming logistics is a central part of that process.”

been in the job before, DoD has been about the business of logistics reengineering/transformation for many years. Are some areas especially problematic?



The primary challenge for us is the transformation to a more agile, flexible, and adaptable logistics system. Today's threats require our military to act within hours, rather than days or weeks. I think that we have made significant progress; however, the size and scope of our operations is what make these challenges

more significant for DoD than other organizations. Integrating changes into a complex network such as the one used by the military services requires time as well as precision.

I came back to the Pentagon, to my current position, to improve the way we provide logistics support to our forces in the field. My highest priority is to do everything in my power to provide the best support to our operational commanders, so they can achieve their vital missions armed with the most advanced technologies we can create.



Your strategic focus and USD (AT&L) leadership priorities have placed major emphasis on accelerating logistics transformation via an integrated set of initiatives called the “Future Logistics Enterprise,” or FLE. What is different about this set of strategic logistics initiatives from efforts in the past?



FLE is the transformation of the way America fields its weapons systems, supplies our troops, and projects our power so that we can win wars. The initiatives within FLE are being implemented across the Services and agencies in a standardized fashion. The DoD has never undertaken such a significant transformation. The initiatives of FLE—aligning the logistics systems to support weapons systems vs. segments of the supply chain, and building Total Life Cycle Systems Management and Enterprise Integration—have been implemented in some areas of DoD but never before have we undertaken the task of implementing such significant changes throughout the organization.



Are there any initiatives within the FLE that provide the force for integrating the overall framework of future logistics processes?



Yes; in fact, the FLE comprises six separate initiatives we can discuss, but typically we categorize the initiatives into three main categories. Those categories are: 1) Weapon Systems Support, 2)

Total Life Cycle Systems Management, and 3) Enterprise Integration.

Weapon Systems Support

Weapon systems support is important to the logistics organizations because this area consumes about 80 percent of our resources. We've been spending about \$64 billion each year on weapon systems sustainment through a structure that, for years, has been disjointed. It has broken up integrated logistics support as if it were just an afterthought of the acquisition process. The result has been functional stovepipes. In that disjointed structure, no one has been in charge of, or accountable for, a particular system.

Furthermore, the "hard break" between acquisition and sustainment has set up a system in which Program Managers have been taking narrow views of their responsibilities: the system has prodded them to concentrate on cost, schedule, and performance, and there has been little longer-term focus on reliability, maintainability, and footprint.

Our current efforts are to align support for these systems before the acquisition process begins to maintain that support throughout the life cycle of the system.

Total Life Cycle Systems Management

We are implementing a life-cycle framework, in which our Program Managers are responsible and accountable for:

- the appropriate consideration of sustainment requirements during the design stage of weapons systems; and
- the integration of the sustainment chain to meet warfighter operational requirements.

This new process is a "closed loop" system. Logistics engineers are directly engaged in the development process to ensure superior levels of reliability, maintainability, and mobility. Feedback from the field and actual reliability/maintainability results are used to design evolutionary upgrades in a disciplined, systematic way.



“U.S. forces maintained a ‘digital awareness’ over logistics support during Operation Iraqi Freedom. We had greater visibility of where supplies were going and we could redirect them if necessary... The implementation of computerized ordering and tracking offered significant advantage for us.”

To ensure accountability during sustainment, life-cycle systems managers are negotiating performance agreements with customers. They are responsible for customer and supplier relationships as well as the management of the sustainment dollars for the customers. Weapon-systems support is provided by integrated government/industry partnerships, built upon industry's inherent strengths in engineering, information management, and supply-chain management, and the government's strengths in maintenance and tactical operations.

Enterprise Integration

To make our business work, we need processes and contemporary information systems that embody best practices. Within the Department of Defense, we have more than 600 logistics information systems that involve more than 400 million lines of computer code. Making the situation even more difficult, many of the systems are batch-processed, with little or no network capability. Thus, they cannot provide the real-time, on-the-ground data that our combatant commanders need.

To strengthen our preparedness in this area, we're moving rapidly to implement commercial logistics business systems, built to international standards, which will help cut through functional stovepipes and help deliver business solutions. These systems will allow us to manage our logistics enterprise based on business roles and responsibilities instead of positions and systems.

Specifically, in just over a year we have:

- defined an integrated enterprise architecture built upon operational requirements and best practices;
- launched six specific Enterprise Integration projects; and
- gone "live" with two enterprise solutions based on COTS [Commercial Off-the-Shelf] software to enable end-to-end service delivery.

Taking these efforts together, you can see we're moving forward quickly to ad-

DIANE K. MORALES DEPUTY UNDER SECRETARY OF DEFENSE

Logistics and Materiel Readiness

Diane K. Morales was sworn in July 17, 2001, as Deputy Under Secretary of Defense for Logistics and Materiel Readiness (DUSD [L&MR]). The U.S. Senate confirmed her nomination on July 13.

As the DUSD(L&MR), Morales serves as the principal advisor to the Under Secretary of Defense for Acquisition, Technology and Logistics for policy and oversight of the Defense Logistics Agency and Military Departments' logistics activities. She specifically oversees Department of Defense policy in the functional areas of materiel management, maintenance, supply chain integration, transportation/mobility, installations, and environment.

Morales has more than 20 years of experience in business and defense matters. Most recently, she was President of DMS, a management services firm that focuses on defense and commercial logistics. Her previous government positions included serving as Deputy Assistant Secretary of Defense for Logistics, 1990-93; Board



Member, Civil Aeronautics Board, 1983; and Deputy Assistant Secretary for Policy at the Department of Interior, 1981-83.

In the private sector, Morales was President of Morales Consulting Services; Vice President for Government Affairs at the Earth Technology Corp.; Marketing Services Manager of 3D/International Inc.; and Account Executive at the advertising and public relations firm of Goodwin, Danenbaum, Littman & Wingfield Inc.

Morales, a graduate of the University of Texas, is a native of Houston, Texas.

dress our logistics challenges through our implementation of FLE.

These changes under FLE will *save time*, by providing more visibility in the supply chain and increasing the productivity of maintainers on the front lines. They will *save money*, by eliminating duplication and achieving economies of scale. And—most important of all—they will *save lives*, by giving our warfighters what they need, when they need it, to accomplish their mission.



As you've stated in this interview, the customer orientation is very important within

the FLE. A recurring theme is the need to provide end-to-end customer support. In your view, how can the DoD Components improve their customer support to the warfighter?



As you mentioned, we are establishing end-to-end accountability for key combat supplies and services such as food, fuel, water, and parts distribution.

Designated service providers that support deployed forces based on operational requirements will accomplish this end-to-end accountability.

Our intent is to stop the “pick-up game” that goes on now in sorting out combat services during an emergency. We must establish a framework for consistent, reliable service and planning—both in advance of, and during, a time of crisis.

Our critical need to address this area is clearly demonstrated by our end-to-end distribution process. Today, many supply chains support varying customer requirements. You don't have visibility about when to expect the parts you order. The average order and ship time for a part from a CONUS depot to a deployed base is 17 days. That's unacceptable to me, to our logistics leadership, and—most of all—to our frontline maintainers who are working so hard to keep our equipment working.

In 2001, the Services, DLA [Defense Logistics Agency], and TRANSCOM [Transportation Command] were pursuing more than 50 independent initiatives to improve pieces of this problem—but no one took a comprehensive view. Today, we are synchronizing those initiatives and developing enhanced business rules and procedures. Our aim is to streamline the process and to minimize hand-offs whenever possible. We intend to implement a reliable defense distribution process and orchestrate seamless, time-definite delivery of materiel, to reduce the burden on our warfighters. The Services' and Defense Agencies' support of these efforts to create a synchronized system will help us achieve success more quickly.



In the Defense Acquisition University classroom, one of the major issues brought up by the Program Managers and acquisition logisticians are the depot maintenance laws, the so-called Core and 50/50 laws. What is your strategy for complying with these laws while at the same time pursuing transformative logistics actions?



First and foremost, we will comply with the applicable laws governing depot maintenance and repair. In the last several years, Congress has provided the Department incremental flexibility in

the management of maintenance depots with provisions that encourage public-private partnerships. I believe that partnering is a win-win for both public depots and their commercial partners. Partnering provides increased efficiencies and allows each sector to take advantage of its core competencies.

As we see the benefits of public-private partnerships grow, I believe it will be easier to agree on other incremental changes that will allow us to improve support to the warfighter. Given that Core and 50/50 are facts of life, depot maintenance partnerships are an effective means of enabling performance-based logistics support for weapon systems while still meeting these statutory requirements.



Mr. Aldridge retired from government service as the USD (AT&L) on May 23, 2003. His initiatives will leave a lasting mark on defense acquisition, technology, and logistics. One of his major initiatives from the beginning was to improve the morale and welfare of the DoD workforce. You have undertaken some logistics workforce development emphases, too. How are those coming?



The quality of the Department's logistics workforce development program differs considerably depending on whether or not one is part of the acquisition workforce. Generally, I think that we have done a good job of addressing the needs of those logisticians who are part of the Acquisition workforce because the Defense Acquisition Workforce Improvement Act [DAWIA] mandates and ensures funding for certain training, education, and experience requirements that must be met for certification purposes. It is the remainder of the logistics workforce, which includes the vast majority of logisticians, who I believe have been neglected in the past.

The Future Logistics Enterprise relies heavily on commercial best practices and systems rather than DoD-unique ones, and will entail a major cultural



“Today, many supply chains support varying customer requirements. You don't have visibility about when to expect the parts you order. The average order and ship time for a part from a CONUS depot to a deployed base is 17 days. That's unacceptable to me, to our logistics leadership and—most of all—to our frontline maintainers who are working so hard to keep our equipment working.”

change that cannot be achieved without the proper indoctrination of the workforce. FLE is increasing the number of logisticians in the acquisition workforce by expanding the scope of the group to include not only acquisition logisticians but also other life cycle systems managers who support Program Managers. However, for both acquisition and non-acquisition logisticians, we are examining other needs to ensure that all DoD logisticians receive the requisite training and education to operate proficiently in our Future Logistics Enterprise.



Your Future Logistics Enterprise initiative has ambitious objectives, going to the very core of how we conduct our logistics functions and processes. Aside from these structural changes, what is being done to train and prepare the logistics workforce for their role in implementing these changes?



We are very aware that change does not occur without the requisite awareness, guidance, and training of the overall workforce, and we have been very careful to develop comprehensive guidance and training objectives consistent with our FLE implementation plan. First, our definition of FLE objectives and corresponding dissemination of information has consistently joined the “what” and “why” of the initiative with the practical application guidance necessary to get it done. We're not just painting grand abstract goals and putting them out there—we're being very specific in what we want to achieve, why it is important, and who constitutes the change agents in getting it implemented.

Second, we are working very closely with our DoD educational and training resources within the DoD, the private sector, and the corporate level. The Defense Acquisition University has had a lead role in a joint effort to ensure that DoD courseware addresses the Future Logistics Enterprise.

Editor's Note: To learn more about the DUSD(L&MR)'s activities and programs, visit the DUSD(L&MR) Web site at <http://www.acq.osd.mil/log>.

Malibu to Baghdad

Perspective of a PM Assigned to the Warfront

LT. COL. JOHN H. MASTERSON, USA

The story that follows was captured from an e-mail received by Defense Systems Management College Professor John Higbee from Army Lt. Col. John Masterson, a product manager and 2002 graduate of DAU's Program Manager Skills Course (PMSC). Masterson wrote the e-mail enroute to Iraq.

On the evening of April 4, 2003, I drove my rental car leisurely down Ventura Highway toward Malibu, Calif. Upon arrival at Coastal Highway No. 1, my hunger pulled me into a place called Johnnie's New York Pizza. I sat at the bar to eat and watched Fox News updates on the war in Iraq, as a couple of patrons viewed my obvious military haircut and politely asked, "Goin' overseas?" A couple of Pepperdine U. undergrads peered up from their homework with polite smiles and I felt blessed by the most liberal of societies...surf-board-wielding Pepperdinians who cared enough to study.

Baghdad was to be completely in U.S. hands soon, and the most distant thought in my mind was to stand on the roof of an occupied building at Saddam International Airport 18 days later... watching tracer rounds pierce the night air toward Ad Dawrah to my east. An unbelievable series of events had transpired over a two-week period, and my physical movement went like this:

Masterson is Product Manager for the Army Phoenix Battlefield Sensor System (PBS2), AN/TPQ-47, Program Executive Office for Intelligence and Electronic Warfare and Sensors (IEW&S), Fort Monmouth, N.J.

California's Simi Valley to L.A.; fly to Newark, N.J., drive to Fort Monmouth, N.J., where I was stationed to pack all my gear...midnight drive to Washington D.C., and Fort Belvoir, Va., for reload and training on some special equipment; fly from D.C. to Atlanta, drive to Fort Benning, Ga., for 4 days of training on weapons and mask, and pre-deployment medical exams; drive back to Atlanta, fly to D.C. area to standby on mission call; visit with my dear Mother

who drove one solid day to see me as if she may never again; depart from D.C. in one-way rental car that I dropped in Wilmington, Del., then taxi to Dover AFB with a Vietnam-era cab driver named Dave who had virtually commanded a Hawk Battery as an E-4 in 'Nam.

This guy was ripping through traffic proudly delivering this high-ranking [right] lieutenant colonel to the nearby

I told my cab driver, Dave, who had virtually commanded a Hawk Battery as an E-4 in 'Nam, to be careful as he drove me to Fort Monmouth to board the C-5A Galaxy that would transport me to Iraq. "I think they'll wait on me."



air base, a trip Dave had made numerous times over the last few months, allowing his taxi service to survive. I told him to be careful, "I think they'll wait on me..." and called the desk at Dover to be sure the flight line knew I was on the way.

"I'm actually trying to get caught by the police," Dave replied, "because then they'll give me an escort to the base and we won't have to fight this traffic...." I didn't interfere with his plan and after convincing the gate guards that he was a Vietnam Vet (and not a "Communist Pig"), we sailed to the terminal just in time for a van to escort me (really) to a waiting C5-A Galaxy Transport Jet, that in all the hurry to get me and five special forces soldiers on board, then idled for another hour as fumes and noise poured out into the Delaware sound. (Testimony to the power needed to de-

liver war.) I finally exhaled as I strapped into temporary platformed seats above a cargo hatch that was loaded with everything one might need to wage victory.

Six hours later and four time zones away, we land in Spain, just north of Seville at a small transition point called Moron Air Base. Breakfast at the local dining facility was preceded by my walk across the base; the smell of a breeze that had gently circumvented a few palm trees was relaxing even though the sun was coming up four hours prior to my brain expecting it. We waited here for another three hours in the USO lounge that provided free coffee, paper, letters, and MWR (Morale, Welfare, and Recreation) ink pens for writing home, while on the tarmac the plane was drinking more fuel at the pump for the ride to Kuwait.

Landing in Kuwait was interesting in that the airport was divided into "civilian" and "military" sections. I had a coworker (who was already on site) pick me up and deliver me to Camp Doha about an hour west-northwest of Kuwait City. I had only been in Camp Doha a few hours when I found out that Baghdad was in my future, and by Wednesday morning a CH-47 Chinook helicopter with two massive blades whirled into Camp Virginia near Udairi Range in northern Kuwait. Twelve other soldiers and I crammed care packages and U.S. Mail on board and I strapped myself in across from a box that read:

To: Any Soldier
From: Troop 670, Northfield Elementary School, MD

We took off in a storm of dust clipping the desert brush at 200 miles per hour. We flew with left and right-door gunners manning loaded .50 caliber machine guns and with the rear ramp dropped, we witnessed the land move beneath us. Unbelievable ride. Desolate scraps of civilization speckled the land between Kuwait's border and Baghdad.

Every 20 miles or so where some stream crept from nowhere, you could see mud-hut homes adjacent to pitifully meek gardens. Staff-leaning shepherds standing on horse-thin ankles kept watch over skinny sheep that seemed to wonder where the greenness had gone. Where the stagnant streams became actual trickles of water, the life forms were more animated.



Often you'd see youngsters clad in bright robes popping out with arms flailing and bright smiles to wave at the big noisy machines that dusted their incomplete rooftops. I noticed the door gunner throwing Tootsie Rolls gently from the chopper; one hand on a loaded

I had spoken to the real warriors of the 3rd Infantry Division and came to realize that our sheer dominance of night vision and superior weapons are brought about by an American society that will accept very few casualties in war...it is that very thing that keeps the acquisition community prodded for excellence.

.50 caliber machine gun, the other searching diligently for candy from a clear Ziploc bag at his side. Quite a contrast and certainly identifying of the spectrum we have presented to the Iraqi people over the last two months.

The Chinook landed for hot fuel-up, blades cranking, just south of a place

code named "Dogwood"; then took off in a flurry toward Saddam International Airport...fittingly name-changed to Baghdad International by coalition forces.

Unbelievable occupation of a city. The airport was one big headquarters for an entire operation that now had the daunting task of calming the harassing fires of rogue bands in and around the city and restoring order. Picture me sleeping on the ticket counter at Reagan National, and the scene is set for how we completely came into this place...I found a corner office full of war dirt and fallen ceiling tiles and cleaned it away so I could sleep soundly in a waterless, powerless, and hot meal-less world. I had no room to complain having talked to several soldiers who had not been in a shower since mid-March...in war, the entire environment is relative...and there is always someone that has lived an extreme that you, personally, will never breach.

Easter morning was a bit different this year. By noon, I would have gone in an armed convoy through the toughest neighborhoods in Baghdad and at 1 p.m. found myself on the west bank of the Tigris River listening to the perimeter security take AK-47 rounds throughout the afternoon. The entanglement between U.S. Army battalion commanders and local mafioso-clerics was like two third graders arm-wrestling in the lunchroom, but with guns to the temple of the loser.

The Iraqi mentality centers on power, and showing any weakness in front of these people is a sure way to lose your shirt. Rage, aggression, and fire power are very clearly understood and Rocket Propelled Grenades (RPGs) that pierce the perimeter are met with total to-the-throat reactions. Two nights prior to my arrival, the battalion commander in the zone I was visiting counter-attacked decisively to make a point that we will not tolerate neighborhoods that let the rogue Palestinians and Syrians pepper our troops with small arms fire. This tactic works. Calm reigned with the strong-arming and U.S. soldiers slept.

I had spoken to the real warriors of the 3rd Infantry Division and came to realize that our sheer dominance of night vision and superior weapons are brought about by an American society that will accept very few casualties in war. This has demanded that we stay on the leading edge of weapons development; and though we put undue pressure on commanders in the field to execute their missions with zero loss of life, it is that very thing that keeps the acquisition community prodded for excellence.

I realized then that giving your life for your country is relatively easy. You walk into a bullet that you didn't mean to walk into. The timing is bad and non-consequential to your life that is now, physically, over. The giving of a life for the country is what families do—Moms, Dads, Brothers, Sisters. Mothers who get out of bed and change diapers. Dads who get Johnny on the bike and teach him how to throw a ball as soon as possible...hardworking Americans who desire their kids to become productive citizens, who teach them manners and go through all the trials and tribulations of raising this kid through the all-knowing teenage years to become a young adult...and then the call comes and they find out that that soldier, airman, marine, or sailor is returning through Dover for one final trip home without saying goodbye...that's giving a life for a country...so we all thank the relatives of all who have suffered that.

A cool breeze kicked up from the Tigris and I pictured this land as it has been since man walked the earth. Hard to believe we were just upstream from the Garden of Eden where the Tigris and Euphrates Rivers make full confluence...and yes, a long way from Malibu.

God Bless the U.S.A.

Lt. Col. John H. Masterson, USA

Editor's Note: The author welcomes comments on this article and may be contacted at John.Masterson@iew.s.monmouth.army.mil.

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Government-wide Information Technology (IT) Acquisitions

Increasing Likelihood of Success Through Leadership and IPT Development

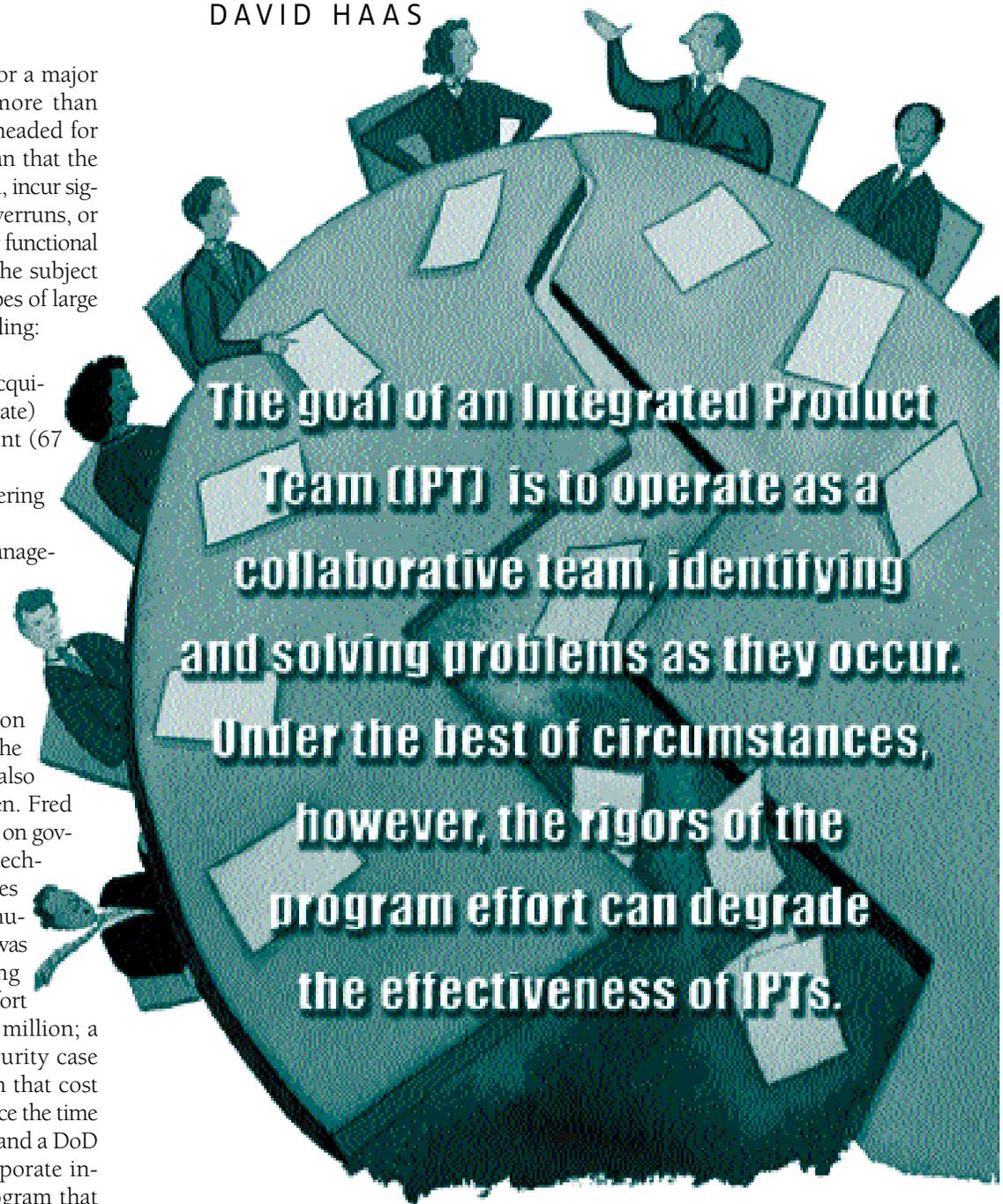
DAVID HAAS

If you provide support for a major acquisition program, more than likely your program is headed for failure. By failure, I mean that the program will be cancelled, incur significant cost and schedule overruns, or become unable to meet major functional requirements. Research on the subject is consistent across many types of large acquisition programs, including:

- Information Technology Acquisition (83 percent failure rate)
- Supply Chain Management (67 percent failure rate)
- Business Process Reengineering (70 percent failure rate)
- Customer Relationship Management (55-75 percent failure rate).

The Silent Crisis in IT Acquisition

The list of federal acquisition successes is very long, but the list of publicized failures is also significant. In June 2001, Sen. Fred Thompson produced a report on government-wide information technology (IT) acquisition failures that described an Army ammunition tracking program that was unable to produce a working system after eight years of effort and an expenditure of \$41 million; a Department of Defense security case control management system that cost \$76 million, but did not reduce the time necessary for investigations; and a DoD environmental security corporate information management program that



The goal of an Integrated Product Team (IPT) is to operate as a collaborative team, identifying and solving problems as they occur. Under the best of circumstances, however, the rigors of the program effort can degrade the effectiveness of IPTs.

Haas works for Altarum Institute, Alexandria, Va., where he leads Collaborative Change Management.

could not demonstrate success after \$100 million in expenditures and nine years of work. According to the DoD Inspector General, "Virtually every information technology project that we audit exhibits significant management problems. Those flaws include poorly defined requirements and frequent user dissatisfaction."

The president's staff, legislators, and the military are aware of the problem and have tried for years to implement solutions through legislation, executive order, regulation, and policy. Prominent legislation includes:

- **Government Performance and Results Act of 1993**—Requires agencies to anchor performance improvement in sound strategic planning. Calls for careful assessment and (if necessary) redefinition of an organization's mission, goals, customers, and performance outcomes.
- **Paperwork Reduction Act of 1995**—Emphasizes achieving program benefits and meeting agency goals through the effective use of IT. In plain terms, agencies should maximize the potential of technology to improve performance, rather than simply automating inefficient processes.
- **The Clinger-Cohen Act of 1996**—Requires agency heads to analyze the missions of their organizations, benchmark and assess the performance of their business processes and, based on this analysis, redesign their mission-related and administrative processes (as appropriate) before making significant investments in information technology to support those missions.

President Bush addresses these concepts in his President's Management Agenda (PMA), which embraces a vision for reform guided by three principles: citizen-centered (not bureaucracy-centered) government; results-oriented government; and market-based government, actively pro-

Critical Success Factor	Rank Order
Executive support	1
User involvement	2
Experienced project manager	3
Clear business objectives	4
Minimized scope	5
Standard software infrastructure	6
Firm basic requirements	7
Formal methodology	8
Reliable estimates	9
Other criteria	10

FIGURE 1. **The Chaos List (Standish Group)**

moting rather than stifling innovation through competition. The Office of Management and Budget has put teeth into the PMA by issuing agency report cards on a quarterly basis that initially found insufficient implementation of these mandates in most agencies.

Common Characteristics of Successful Programs

The military is moving to identify the critical factors for IT acquisition success. The Assistant Secretary of the Navy established the Software Program Manager's Network (SPMN) in 1992 to identify industry and government software best practices and promote these practices to managers of large-scale DoD systems acquisition programs. Operation and administration of the network now belong to the Office of the Secretary of Defense for Acquisition, Technology and Logistics. The best practices promoted by SPMN include: work breakdown structures, earned value management, requirements management, and other program management tools designed to provide effective program management oversight and project control.

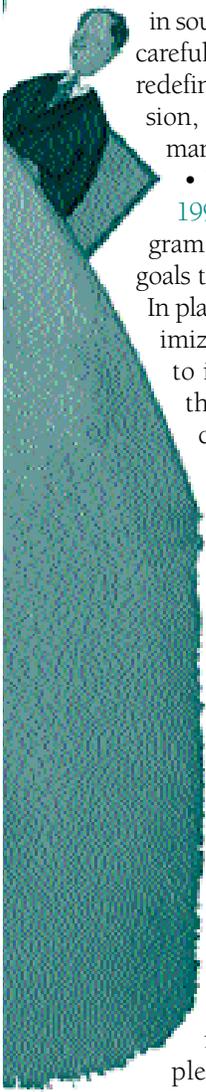
Intuition might lead one to believe that these and other technical best practices are the keys to addressing the causes of program failure. The best-practice Capability Maturity Model, promoted by the Software Engineering Institute at Carnegie-Mellon University, and the Pro-

gram Manager's Book of Knowledge, published by the Program Management Institute, reflect the view that lack of technical rigor causes program failure. However, research finds that program failure is most closely correlated to low levels of leadership support and user involvement in the program.

A well-known study in this area is the CHAOS List produced by the Standish Group, which summarizes the critical factors for program success in order of importance to program success (Figure 1). Additional research and studies identify similar causes of program failure including lack of sustained management commitment and leadership, cultural lack of preparation, and resistance to change.

In a November 2002 report, the General Accounting Office identified nine key practices for successful government transformation (Figure 2), which further confirm the critical role of leadership and communication in program success. While employee involvement is listed as the eighth most important item, readers will note that several highly rated items, such as dedicating an implementation team and establishing a communications plan, are components of employee involvement.

I've found over the years that some leaders who initiate change and transfor-



mation efforts then turn around and resist them. It is important to recognize that there is a pivot point in every project when the leader and potential users grasp both benefits and drawbacks of the proposed change. Assuming the approach is sound, the individuals will at that point either choose to focus on program benefits and become program champions, or disown the program and become critics by focusing on the drawbacks and difficulties in implementation. At that point, the program must be “sold back” to the sponsor and the organization.

How can a program office or project team build executive support to increase the likelihood of executive support? The solution set is diverse and will vary according to each program's specific strengths and weaknesses. No cookbook approach exists—as we are not dealing with code or hardware, but rather people with varying motivations and aspirations. I have found one consistent technique that works extremely well in lowering leadership and user buy-in risks (and it is a well-established DoD best practice)—Integrated Product Teams (IPTs). The IPT model builds buy-in through the active involvement of the functional areas impacted by change.

IPT Background

Since its introduction by former Secretary of Defense William J. Perry in 1995, the DoD Integrated Product and Process Development (IPPD) methodology has been successful in promoting cross-functional solutions to difficult acquisition problems. The key component of this success has been the IPT as a multifunctional team that promotes information sharing and the production of deliverables that meet common goals.

IPTs, as you know, consist of structured teams that integrate acquisition activities from product concept through production/field support, and address acquisition processes ranging from strategy to planning to execution. (I have just described Overarching, Working, and Program IPTs respectively.) The advan-

1. Ensure top leadership drives the transformation.
2. Establish a coherent mission and integrated strategic goals.
3. Focus on a key set of principles and priorities.
4. Set implementation goals and timeline.
5. Dedicate an implementation team.
6. Use a performance management system.
7. Establish a communications strategy.
8. Involve employees.
9. Plan to build a world-class organization.

FIGURE 2. The Key Government Transformation Practices

tage of IPTs over traditional teams is the formal structure that encourages productive and concentrated effort. For example, formal IPTs have charters, assigned authority, and functional diversity.

The goal of an IPT is to operate as a collaborative team, identifying and solving problems as they occur and delegating responsibility as required to “get the job done.” Under the best of circumstances, however, the rigors of the program effort can degrade the effectiveness of IPTs. The stress of multiple personnel changes, aggressive timelines, software development difficulties, and frequent geographic dispersal cause the opera-

tion of IPTs to regress and reflect a more traditional staff meeting, with reporting and decision-making/task assignment not reflective of a true team environment. Once the slow slide in effectiveness begins, leadership support and stakeholder buy-in begin to erode, leading ultimately to the program's failure to achieve its objectives. Research shows over and over that the IPPD methodology is sound, but flaws in establishing or maintaining IPTs according to IPPD principles typically cause failure.

To address the issue, I led a project team at Altarum Institute in developing an IPT Development Methodology designed to establish or reestablish teaming efficiencies by drawing together best practices and proven methods for building and sustaining high-performance IPTs. The methodology focuses on eight conceptual critical success factors:

- Effective team leadership.
- Successful IPT initiation.
- Broad range of team member competencies.
- Shared vision among participants.
- Team member empowerment.
- Practice of teaming skills.
- Availability of enabling tools.
- Effective collaboration among IPT members.

We created a relationship between these eight conceptual critical success factors and 23 practical IPT development ac-



tivities that must be completed to assure a high-performance IPT. Taken together, the 25 activities form a checklist for monitoring the quality of an IPT's purpose, process, communication, and people.

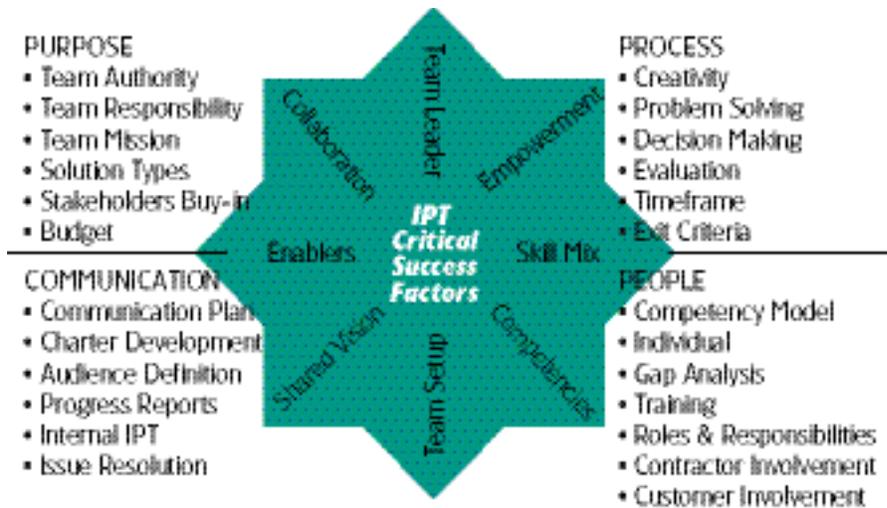
Figure 3 combines all the facets of the IPT methodology. Be aware that the methodology must be customized to take into account environmental and organizational issues for a particular acquisition program, and that the different activities are stressed based on the acquisition phase of the program. That said, the model works just as well for weapons systems acquisition as it does for IT acquisition programs.

Activity Grouping I: Purpose. The activities under this heading ensure that the entire team works toward a common goal, rather than multiple competing goals. After all, a team working at cross-purposes will fail to reach its objectives. The focus on purpose helps IPT members meet the critical success factors of shared vision, collaboration, and empowerment.

Recommended activities include development of a written charter, budget documents, performance outcome criteria, and documentation of the team's purpose. I recommend development of IPT charters with performance-based exit criteria that define deliverables even before the team begins its work. The methodology guidance also calls for regular progress reports to the chartering authority.

Activity Grouping II: Process. The goal is to create a process that keeps the IPT members focused on achieving results within a defined timeframe. Facilitators should be identified who can assist team members in developing and implementing performance expectations, standardized workflows, designated approval authority, and management-through-exception techniques. Often teams work without clear understanding of how best to take advantage of the different tools and techniques available to them; the techniques are identified and described through these activities.

FIGURE 3. IPT Development Methodology



Activity Grouping III: Communications. This set of activities ensures that information channels are established to provide immediate, accurate, and comprehensive information for IPT members and program leadership. IPT communication can include e-mail updates, standardized reports, internal progress reports, and team meeting minutes. Program leadership communication can include regular project communication, briefings, and document dissemination.

Activity Grouping IV: People. The training and cultivation of IPT members require careful consideration. A mix of perspectives, experience, and expertise is required among the members of effective IPTs. The IPT leader must continually evaluate stakeholder representation to assure both broad and effective team participation. IPT leaders need:

- A clear understanding of the skills and qualifications of their team members.
- A set of competencies against which the members are matched.
- A documented set of roles and responsibilities for IPT members.

In this area, structured activities such as assessment and action planning are used to assist the IPT leader in addressing weaknesses.

Case Study

An example of how the IPT methodology can turn around a struggling pro-

gram recently occurred within a government logistics and supply chain management organization. Six months before my involvement, an integration contractor assisted the organization in initial trials of a software program as an element of a major acquisition program. Despite the best efforts of technicians, trainers, change management agents, and help desk staff, production fell dramatically as soon as the application was installed, and would not budge from very low levels. I was asked to lead a team that would quickly evaluate the situation and develop a plan for improving productivity.

It turns out that the users had already documented hundreds of problems associated with the application, and the need for further evaluation of the *problem* no longer existed. Consequently, we made a quick course correction and decided to use the IPT Methodology as a framework for helping the user community solve the worst problems. Despite requests that we bring in technical experts to fix the software and coach users, we proposed and then implemented a four-step process involving the users themselves:

- Brainstorm quick “win” opportunities for improvement.
- Establish short-duration, problem-solving IPTs.
- Implement improvements identified by the teams.

- Report back on findings, including performance change.

To begin with, we brought the 35 initial users together to first, identify the top issues related to application implementation; and second, assign priorities to these issues. Next we asked for volunteers to form IPTs that would address the top five items, which included such typical implementation issues as access to historical data, topics requiring additional training, and status of trouble tickets. The volunteers were given simple ground rules—no meeting longer than 30 minutes, focus on changes the team can make—and then met several times to find a solution to the assigned issue.

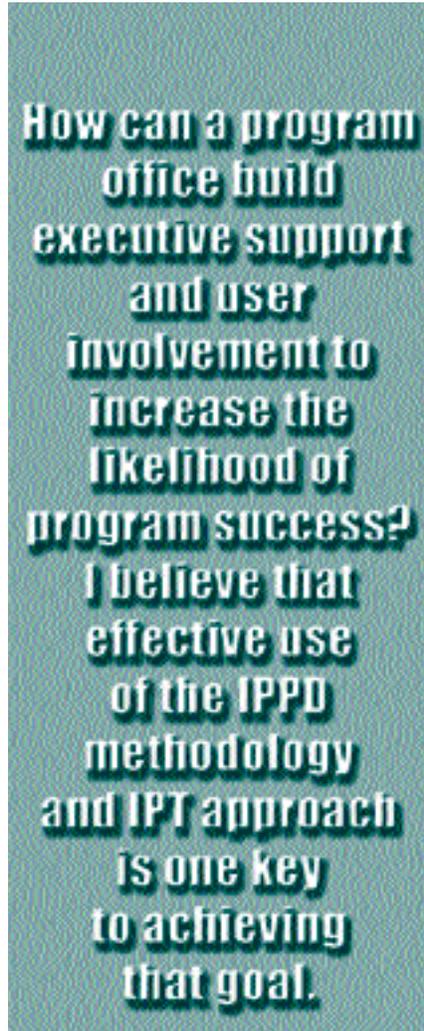
After a week, we brought the full team back together for report-outs. One team member from each IPT provided an explanation of the proposed solution with time for comment from the entire group. While many concept demo users remained skeptical of the process, a number were won over. Feedback comments included, “It’s great to hear that others are having the same problems that I am having.” We found that the greatest benefit came not from implementing the solutions themselves, but from providing users with a forum for discussion, an opportunity for team building, and a means of communicating effectively.

The users asked us to support the completion of a second round of IPTs, which addressed more complex issues. We did that, and left the group with the following set of tools for continuing the process:

- Action Item Database to identify future IPT issues.
- IPT framework to address the issues.
- Best practices documentation to communicate solutions.

Empowering Teams

I used the IPT methodology to empower the teams so they could effectively generate rapid improvements, implement a repeatable team-based process, begin efforts to establish a culture of team-



work, and provide a set of useful management tools to streamline activities. I expect that the IPT process will increase a sense of empowerment and shared vision for the user community.

How can a program office build executive support and user involvement to increase the likelihood of program success? I believe that effective use of the IPPD methodology and IPT approach is one key to achieving that goal. I recommend reviewing the formal guidance and supporting Web sites of the DoD sponsors, including:

- The USD (AT&L) Web site on systems engineering: http://www.acq.osd.mil/io/se/ippd/ippd_pubs.html.
- Interim Defense Acquisition Guidebook: <http://dod5000.dau.mil/InterimGuidebook.doc>.

- Defense Acquisition University Change Management: <http://deskbook.dau.mil/software/gen/overview.html>.

I also recommend that you implement IPTs with the goal of increasing participation in the acquisition process, including the following activities:

- Make the sponsor part of the team by selecting members in coordination with the sponsor and including formal and informal stakeholder influence. (One team, for example, might consist of the acquisition program manager, contractor project manager, and testing lead.)
- Gather information using interviews, observation, and informal conversation to understand team members and determine their views, values, and drivers related to the program, roles and responsibilities, and organization.
- Meet with the team to set program mission, objectives, and action plan. Establish ground rules for providing leadership and direction such as communication strategies, program oversight, and collaboration.
- Establish performance measures against which the decisions of the advisory committee and the program will be measured. Include process measures to gauge current status of effort and outcome measures to evaluate success toward reaching objectives.
- Consider executive coaching to assist in developing sponsor and advisory committee communication skills. The coach must be independent of the program office to provide objective, unbiased advice and feedback to the sponsor.

These and other techniques can be used to assist acquisition programs in reducing the risk of failure in a manner that the commercial world may someday emulate.

Editor's Note: The author welcomes questions or comments on this article. Contact him at david.haas@altarum.org.

Army Acquisition Support Center Prepares for the Future

With New Online Look

<http://asc.rdaisa.army.mil>

FORT BELVOIR VA

The Army Acquisition Support Center (ASC), the new Field Operating Agency under the Assistant Secretary of the Army for Acquisition, Logistics and Technology, has revamped its Web site to better serve its customers, and ultimately the soldier. ASC's customers, the entire Army Acquisition, Logistics and Technology workforce (AL&TWF), will notice the striking bronze and green design of the new site, <<http://asc.rdaisa.army.mil>>, which reflects the dynamic face of the AL&TWF and reinforces its support of the warfighter. The new Web site provides user-friendly navigation and encompasses the goals and structures that make up the organization.

"Army acquisition plays a critical role in protecting America and America's fighting forces," said ASC Director Col. Mary Fuller. "ASC is preparing for the future and helping to ensure that those who make the decisions that affect our fighting forces are well equipped with the most technologically advanced resources. We have upgraded our Web site to make it a more useful tool for our customers—both in the office and in the field."

ASC, formed by merging the Army Acquisition Career Management Office with the Army Acquisition Executive Support Agency as well as career programs CP-14 (Contracting) and CP-13/17 (LogPro), presents a new site that features in-depth information about the organization's infrastructure, programs, publications, career information, and events. ASC's workforce operates in a dynamic environment using leading-edge concepts and technologies to ensure that warfighters have the equipment and supplies they need to do their job.

Reinforcing
Support to the
Warfighter Through
User-Friendly Access
to Information
Resources



The Army Acquisition Support Center is designed to support the readiness of the Army's warfighter by developing a world-class professional acquisition workforce, effectively acquiring and stewarding resources, and providing customers with the best possible products and services.

<http://asc.rdaisa.army.mil>

Acquisition and Logistics Excellence

2003 Conference and Trade Show

SYLWIA GASIOREK-NELSON

How will the digital age change the way government and large businesses identify small, minority and woman-owned suppliers, subcontractors, manufacturers, and service providers? And how will those small businesses meet large prime contractors and government buying agencies and end users? The 2003 Acquisition and Logistics Excellence Conference and Trade Show provided a unique forum and opportunity for that much needed “big guy, little guy” interaction and networking.

This year's event was held at the University of North Florida in Jacksonville, April 23-24, 2003. Sponsored, planned, and supported by Naval Air Command, defense industry, and several government agencies/administrations/centers, the 2003 conference brought together Acquisition, Technology and Logistics (AT&L) professionals from government, academia, and defense industry, as well as many distinguished speakers and panelists. The two-day gathering proved to be a great marketing opportunity for small businesses to meet large prime contractors and government buying agencies, as well as an opportunity for structured and informal interaction among members of the acquisition community. Another bonus was training delivered by professionals in the business, as well as valuable insights from senior acquisition and logistics leaders.

Numerous seminars in acquisition training, career development, leadership, and health and wellness created a forum for teaming, collaboration of ideas, and con-

Gasiorek-Nelson is a full-time contract editor for Program Manager Magazine, DAU Visual Arts and Press, Fort Belvoir, Va.



“From the DACM perspective, acquisition career management is the best job in the Navy... It's program management to the max.”

**—Christine Stelloh-Garner
Director, Acquisition Career
Management
Department of Navy**

tinuous examination/adoption of innovative practices.

Opening Remarks

Welcoming all the participants, Christine Stelloh-Garner, Director, Acquisition Career Management (DACM), Office of the Assistant Secretary of the Navy for Research, Development and Acquisition, said, “We've got a great agenda for you. My office is involved with this event, and that's a thrilling idea for me as I've tried to get smart over these last couple of months as to what I do, what I need to do for you, and how our office can serve you. And I'm finding that this event, which emphasizes continuous learning, is a great opportunity.”

She noted that DoD has focused for the entire past year on Transformation. And Transformation, she emphasized, provides a message that change is here to stay. “All of our speakers will share with you over the next couple of days, either in the individual training sessions or here in the main session, that the conference theme—*Achieving Speed, Agility, and Innovation to Win the Challenges of Our 21st Century Warfighter*—will come through again and again. So I believe the only constant will be change,” she said.

Stelloh-Garner related that last year the Navy Secretariat underwent a great deal of change. The entire Secretariat downsized, as the Acquisition Reform Office was combined with the old Office of Acquisition and Business Management. In fact, she added, a number of new Deputy Assistant Secretaries of the Navy (DASNs) emerged from that downsizing and consolidation effort:

- DASN Acquisition Management

- DASN Air Program
- DASN Command, Control, Communications, Computers and Intelligence (C4I)/SPACE
- DASN Integrated Warfare Program
- DASN Littoral and Mine Warfare
- DASN International Programs
- DASN Logistics
- DASN Management and Budget
- DASN RDT&E
- DASN Ship Program

From her perspective as the Navy DACM, Stelloh-Garner said that acquisition career management is the best job in the Navy. “If you are aspiring for a job, this is the one you want to have at some point. It's program management to the max—except we get to work specifically with people in careers rather than hardware and systems. And I can't tell you how much I'm enjoying this job. I look forward to coming to work. I work with a great team both within my immediate staff as well as the extended team—representatives from NAVAIR [Naval Air Systems Command] and other agencies we work with,” she said.

Continuous Learning

Stelloh-Garner commented that it's important to continue learning. “Continuous Learning money is what we are using today to help sponsor this event. Continuous Learning is what you are going to experiment with over the next couple of days.” Referring to the USD(AT&L)'s policy that every member of the AT&L workforce accrue 80 Continuous Learning Points every two years, she advised conference participants to be sure they get credit for the 2003 conference.

Conference Keynote Speaker

Introducing the morning keynote speaker, Defense Acquisition University (DAU) President Frank Anderson Jr., Stelloh-Garner noted the similarities between Anderson and Revolutionary War-era publicist Thomas Paine, who was a catalyst for bringing America together to engage in its war for independence.

Anderson, she said, is “DoD's Thomas Paine”—a catalyst for change not only



“We are recognizing that there is power in a team, and we've seen it in action. We are going to have to do that in terms of how we do logistics, the way we do acquisition, the way we shape acquisition strategies.”

**—Frank Anderson Jr.
DAU President**

within his own organization, but also across the entire Department.

Transformation, she said, was the name of the game at DAU. She related how

Anderson has focused on the internal organization of DAU for the last year, and is now teaming with the Services and Service DACMs on how to deliver training as a team, how to identify training requirements, and how to best fulfill those requirements.

DAU as Corporate University

Anderson began his presentation by providing an overview of what's happening in the Defense Acquisition University and what's going on in the Department as far as Transformation.

Explaining the concept of a corporate university, Anderson said that DAU is somewhat of a split personality. “We are torn between being an active institution and corporate university, but our entire mission is to help all of you excel in the workplace.” DAU, he continued, does not provide degree-type training, but because of the wide number of strategic partnerships with academic institutions, the training received through the university counts toward individual degrees.

Anderson emphasized that as a corporate university, DAU is participating in a lot of initiatives in its continuous efforts to enhance the AT&L workforce skill sets. DAU has a packet of Continuous Learning programs and 49 Continuous Learning modules on the Continuous Learning Web site (http://clc.dau.mil/kc/no_login/portal.asp).

“We are not a research institution. We are not trying to create new knowledge, but we're trying to do research on those things that will help all of you advance in your workplace,” he stated.

“We want line of sight between those things that we have invested in, and the ability of the workforce to use our Knowledge Sharing and Communities of Practice Web sites as 21st Century learning assets. That is one of the huge ways that we hope to help create a smarter workforce—by connecting practical with practicality,” Anderson said.

Just as DoD is looking at Transformation and the way the Department con-

ducts warfare, he said that DAU is going to have to go through the same kind of Transformation in terms of how the University supports the acquisition, procurement, and support of DoD's weapon systems "to make sure that we share knowledge instead of hoarding it."

Noting the size of the various acquisition career fields, Anderson said that the largest career fields are Systems Planning, Research, Development and Engineering (SPRDE), followed by Contracting. Each career field, he added, has a functional team set up (Course Administrator, Functional Advisors), and each team for each one of the functional communities tries to answer two fundamental questions:

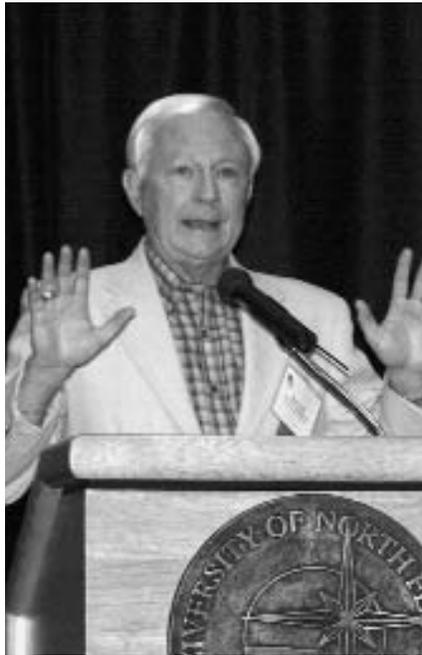
- What is it that you need to know?
- What should you be able to do to excel in your job?

Inviting the audience to provide feedback, Anderson said, "When you rate a course—if you don't like it, don't tell us it was great so you can leave town with your certificate. Take the time to give us thoughtful feedback because we are trying to respond to those things that will make training better for you and for the next individual going through our course. We are collecting the information so that you have an opportunity to influence the kind of training that you, and those that will follow behind you, will be receiving."

Transformation

Anderson told the conference participants that Secretary of Defense Donald Rumsfeld has sent out new Transformation Guidelines—"a very important document," he said, "that empowers all of us to take a leading role in terms of how we will change and shape the Department of Defense." Anderson discussed three important aspects of the Transformation document.

First, he reminded everyone that it is up to all of us to succeed. "It's not just about change for the sake of change, but looking at better ideas in terms of how we do things," he said.



"We are trying not to tell you how to bake the cake, but tell you what we want to achieve...That is a fundamental difference between the old way of doing business and the new way of doing business."

**—Edward C. "Pete" Aldridge Jr.
Former USD(AT&L)**

Second, Anderson said that Transformation isn't something that can be done at the top, but it involves all of us. "Secretary Rumsfeld can't change the institutions that we have here in Jacksonville or elsewhere throughout the Department of Defense. It is up to the leader-

ship team here and to all of you that show up to work everyday. It is going to take all of us, each and every one of us, who are going to have to make the commitment to change. All of us are going to have to decide that we are willing to improve the organization that we are a part of. Transformation is going to occur because of all of us," he said.

And third, he continued, we have to answer the following questions:

- When is the transformation going to be done?
- When will we be through with change?

"We won't," he stated. "The only constant that we have in this Department is, in fact, *change*. All of us need to get comfortable with it."

He went on to say that the reason the Navy and the Marine Corps are willing to sponsor conferences of this nature is "because they want you to take something back to the workplace—this is all about creating a learning culture and about sharing." Anderson invited all the participants to go back to their workplace and share and encourage every one of their teammates to be a part of the Transformation movement that the senior leaders are trying to bring in for us.

"This gives all of us an opportunity to shape and change our working environment. We are all responsible. We are in power. If we are going to make a difference, we are going to have to change each and everyone's job to ensure that we are optimizing every single dollar invested in our organization. It is the only way we can truly transform the Department," he said.

Everybody in the Department of Defense, Anderson said, should feel good about what our warfighters are doing and the power of jointness. "We are recognizing that there is power in a team, and we've seen it in action. We are going to have to do that in terms of how we do logistics, the way we do acquisition, the way we shape acquisition strategies. There is power in team unity," he stated.

"It's all about sharing—not only sharing between the different Services, but sharing within Services, sharing between Departments. We want to ensure that every one of our teammates is the smartest he or she can possibly be, because through collective action we will win. We really want to do the right thing—and we believe we are," he emphasized.

Anderson concluded by saying that Transformation involves all of those who work for the Department. "You have to see where you personally fit; you have to think about your role. DoD is our organization—we are trying to transform where we all work. We need to keep challenging ourselves and pressing hard to make sure what we do tomorrow is better."

Luncheon Keynote Speaker

Welcoming the luncheon keynote speaker, [then] Under Secretary of Defense (Acquisition, Technology and Logistics) Edward C. "Pete" Aldridge Jr., Stelloh-Garner said that the conference planners were particularly fortunate and honored to host Aldridge as their keynote speaker in view of the fact that he had just announced his imminent retirement as USD(AT&L).

"The fact that he still take the time out of his schedule to come to talk to us, to share ideas with you is a great, great honor. I hope you'll have the opportunity to meet with him and ask him questions on his perspectives on where we are, where we have been, and where he thinks we need to head—what business is not yet done."

Aldridge began his remarks by talking about the initiatives and strategies developed during his tenure as Under Secretary. One of the first things he did was to change the acquisition community's focus from acquisition reform to acquisition and logistics excellence. This, he believed, better reflected the goals and aims his office was trying to instill throughout the acquisition community.

"When I first entered this job a little over two years ago," he said, "I set for myself

"It's not just about change for the sake of change, but looking at better ideas in terms of how we do things."

**—Frank Anderson Jr.
President, Defense
Acquisition University**

five goals that I wanted to accomplish." Those five goals, which Aldridge instituted in May 2001, are now the foundation of DAU's strategic planning and curricula. "I want to let you know why I developed those goals," he said, "and what I think we've done to accomplish them."

Goal 1

To improve the credibility and effectiveness of the acquisition and logistics support process. Aldridge stated that cycle times were too high, too long, and cost overruns were too frequent. The credibility of the acquisition and procurement process—from the perspective of Congress, which funded DoD's acquisition systems and programs—was almost zero. "We had to focus on how to rebuild this acquisition and logistics support system," said Aldridge.

DEFENSE ACQUISITION BOARD

Aldridge restructured the Defense Acquisition Board to eliminate many unnecessary meetings, moved the Assistant Secretaries, (who in the past served on the Board) and replaced them with the Service Secretaries so they could brainstorm together the entire decision-making process of their Military Departments. "It's amazing how fast things happen this way," he said. "Issues are decided in a meeting rather than two to three months of staff time trying to figure out how to get them through the acquisition process."

EVOLUTIONARY ACQUISITION

Another thing Aldridge did—a monumental change in the eyes of many throughout the acquisition community—was convincing the Deputy Secretary of Defense to cancel the burdensome DoD 5000 series—some 250 pages. "We cancelled the old 5000 series, put some interim guidance in place, and cut it down to about 40 pages. You can actually read this document and know what to do," he said.

The new document gives more responsibility to program managers—more ability to innovate, to create, and to be more efficient. "We are trying not to tell you how to bake the cake," Aldridge emphasized, "but tell you what we want to achieve. I think that's what the guidance is. That is a fundamental difference between the old way of doing business and the new way of doing business."

SPIRAL DEVELOPMENT

"In the past we had recognized spiral development, but we didn't mandate in the technology program that it was essential to make spiral development happen right along with the program." Spiral development, evolutionary development, and properly pricing programs must go hand-in-hand, he emphasized.

FUTURE LOGISTICS ENTERPRISE

"We started a new logistics idea—the future logistics enterprise," Aldridge continued. "It's a way to take on the logistics system in a more business-like approach." Aldridge sees the Future Logistics Enterprise as providing requestors and suppliers more visibility into the in-transit material. "We need to be better predictors of the need ahead of time. We have to be able to plan our services contractors just as we plan for acquisition of equipment, and the Future Logistics Enterprise is a process we've started to make that happen," he said.

Goal 2

To revitalize the quality and morale of the AT&L workforce. Aldridge told the conference participants that over the past 10 years or so, we all experienced the reductions in the acquisition workforce.

“That's not a very good message,” he emphasized. “Government has to continue to be a very smart buyer of the equipment and the support we get from the contractors. We have to invest in the workforce and determine what workforce we need, what size, and what skills are necessary today and in the future.”

On the personnel side, he said that OUSD(AT&L) had a good start on an acquisition workforce strategic plan that fits into DoD's acquisition workforce pilot projects. “We started the Acquisition Workforce Demonstration Project—a pay for performance program. Rather than the automatic step increase, this sends a strong message to people about how we expect them to perform,” he stated.

Another unqualified success Aldridge pointed out was the re-invigoration of DAU. “We want that university to be the landmark in its ability to train and educate acquisition workforce members so that they can do a much better job,” he said.

Goal 3

To improve the health of the defense industrial base. “If we are to have the finest weapon systems in the world, we have to have the finest industry in the world as well. We cannot expect the finest equipment delivered to our warfighters without the defense industry that provides that equipment being healthy, innovative, and profitable.” Contrary to some prevailing perceptions throughout the government, profitability is not a bad word, he said. “It's the engine of innovation.”

Companies who are profitable attract investors, he pointed out, and also attract quality people. They deliver high-quality products and the government benefits from that.

“Two days after I took office,” Aldridge said, “I published a policy document that the Department of Defense will no longer encourage contractors to pay for [DoD's] shortfalls in research and development activities.” (Industry was using Independent Research and Development [IR&D] money to pay for

“If we are going to make a difference, we are going to have to change each and everyone's job to ensure that we are optimizing every single dollar invested in our organization. It is the only way we can truly transform the Department.”

—Frank Anderson Jr.
DAU President

cost increases in DoD development programs.) Aldridge also mentioned that the Department is working to attract non-traditional industry to come and work for the Department of Defense.

Goal 4

To rationalize the weapon systems and infrastructure with our defense strategy. “We need to think about the new world order and rationalize what we're doing with weapon systems and infrastructure.” He spoke of the Quadrennial Defense Review and the Defense Planning Guidance, and how those reviews led to changes and ideas.

All those policies have led to decisions on weapon systems,” Aldridge said. Some of them he mentioned included the Army Crusader; the Navy's DD(X) “family of ships” program; and the Joint Strike Fighter, now a hugely successful

international program. In fact, he said, the Joint Strike Fighter is the largest defense program in the history of the Department of Defense.

Aldridge said that the Navy has started the SSGN conversion of the TRIDENT to a conventional submarine; the Marine Corps has restructured the flight test program for the V-22 Osprey; the Secretary of Defense has redesignated the Ballistic Missile Defense Organization (BMDO) as the Missile Defense Agency (MDA), effectively placing increased emphasis on ballistic missile defense; and the Army has restructured the RAH-66 Comanche program—“all in the name of Transformation,” he noted.

Transformation is not a thing, not an end-state, he said. Transformation is a journey and usually consists of two parts. One part is using things we currently have in better, more innovative ways. Transformation is also the innovative use of new technology to achieve improvement in capability.

Goal 5

To initiate high-leverage technologies to create the warfighting capabilities and strategies of the future. Aldridge observed that over the years, the Science and Technology (S&T) budget of the Department of Defense has been declining. It was being used, he said, as a billpayer for other needs of the Department—and it was wrong. The reason it happened, he explained, was because S&T tends to be way out in time and doesn't have an immediate, measurable impact. “To try to offset that trend, we set a goal that about 3 percent of the total spending of the Department of Defense would focus on S&T,” he stated.

“We pushed the Defense Advanced Research Projects Agency [DARPA], which had digressed as a result of previous S&T budget cuts, back on the leading edge of technologies,” said Aldridge. He also spoke of the Department's emphasis on Advanced Concept Technology Demonstrations (ACTDs) and how DoD is trying to get the technologies it develops to the warfighters faster. “ACTDs

do that," he said. "We are focusing our activities on space, information, robotics, energy, and precision measurement—those kinds of things have a high priority within the S&T budget."

Aldridge acknowledged that certain things still remain to be done. For example, increasing the rate of shipbuilding; raising the Tactical Air (TACAIR) modernization rate higher to lower the average age of DoD's tac-

tical forces; eliminating substandard family housing units at a faster pace; and modernizing more quickly some of DoD's aging legacy systems.

Overall, Aldridge believes the acquisition community should be very proud of what it has accomplished. "Look at the things we've accomplished vs. those we didn't...I think we are on the right vector, and I know, my successor Mike Wynne [Principal Deputy Under Secre-

tary of Defense for AT&L], is going to come in and keep us on the same vector," Aldridge said.

Aldridge predicted that the AT&L community will continue to make progress toward Transformation. "It's been only a little over two years, but I'll tell you they were 'dog years'—seven years to one. And so I'm looking to a little bit different, less stressful life. Thank you...and keep up the good work."

CONFERENCE PRESENTATIONS AND SEMINARS

- DAWIA and Continuous Learning Program Requirements Updates
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- Improving Business Performance Through Effective Project Management Practice
- Merging Logistics and Acquisition at the OSD Level
- The Lean Operations
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- Performance-Based Services Contracting
- Lead Maintenance Technology Center Environment
- One Touch Support
- Evolutionary Approach to Systems Acquisition Workshop
- Spiral Development 101
- Joint Aviation Technical Data Integration (JATDI)
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- DoD E-mail
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- Strategy in Action Systems Thinking
- Joint Configuration Management Information System
- On Your Way to Total Fitness
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- General Wellness
- The Best of all Opportunities—The OSD Mentor-Protégé Program
- Wide Area Work Flow

DCMA Providing Insight, Support to Army “Shadow” TUAV Program

First DoD UAV Program to Progress into Production Acquisition Stage

JOYCE MASON

The Defense Contract Management Agency is an independent combat support agency within the Department of Defense. As the Department’s contract manager, DCMA is responsible for ensuring federal acquisition programs, supplies, and services are delivered on time, within cost, and meet performance requirements.

The Department of Defense is undergoing a transformation, focused on new methods of managing acquisition programs with fewer resources. Will service provided by the Defense Contract Management Agency (DCMA) to the customer be compromised? Not in the least!

This article will demonstrate DCMA’s experiences on the Tactical Unmanned Aerial Vehicle (TUAV) program. Specifically, we’ll discuss the new acquisition philosophies from a DCMA perspective, and identify promising practices we discovered during our transformation process that demonstrate our effectiveness in continuing to provide world-class support that enables warfighters to fight and win.

Shadow 200 UAV

On Dec. 27, 2002, the Army awarded AAI Corp. a contract to provide four Low-Rate Initial Production (LRIP) Tactical Unmanned Aerial Vehicle (TUAV) systems for the Shadow 200 UAV after completion of a rigorous Systems Ca-



The first in a new generation of UAVs, the compact “Shadow” TUAV system provides U.S. Army brigade commanders with crucial intelligence—delivered efficiently from its electronic payload directly to tactical command centers. From left: The Shadow Tactical UAV Team—Joyce Mason, DCMA Maryland PI; Linda Scott, AAI Corp. PM; Tim Owings, TUAV Project Office, Assistant Program Manager (APM) Brigade; Mike Padden, TUAV Project Office, Chief Acquisition; Steve Reid, AAI Corp. UAV Director; Ron Smith, TUAV Project Office Logistics; and Charles Johnson, U.S. Army Aviation and Missile Command Procurement Contracting Officer.

pabilities Demonstration (SCD). The mission: to provide the Army field commander with a capability for “over the horizon” tactical reconnaissance. The acquisition strategy included the selection of proven off-the-shelf technology that could be matured through block enhancements to meet specific tactical objectives. AAI had previously established a core competency in this tech-

nology in the mid-1980s with the Pioneer UAV program.

Program Support Team

Once the contract was in place, DCMA mobilized the necessary resources for the Shadow 200 UAV effort and established a multifunctional Program Support Team (PST). This DCMA team of professionals serves as the eyes and ears

Mason is the DCMA Maryland Program Integrator for the Army’s Shadow 200 Tactical Unmanned Aerial Vehicle (TUAV) program. She is an April 2003 graduate of DAU’s Intermediate Systems Acquisition Course (ACQ201).

for military program offices and buying commands, providing support for contracting, production, quality, government property, safety, engineering, and software functional disciplines. Orchestrating the effort was a Program Integrator (PI), who served as the primary conduit for communication between the supplier, the project office, and DCMA teams. The DCMA team also met with the supplier to discuss the initial program technical, cost, and schedule risks, and to ensure compliance with contract terms and conditions once the contract was awarded.

In-Plant Presence

DCMA provides the customer an industry-wide perspective as a result of its presence across the defense industry spectrum. Indeed, one of DCMA's greatest benefits is its in-plant presence. The in-plant DCMA Quality Assurance Representative (QAR), teaming with the contractor's Quality Engineer, concurrently reviewed the risks associated with completed drawings, procurement requisitions, and manufacturing instructions as they became available. In addition to improved efficiency in releasing orders to manufacturing, the review provided an early opportunity for the QAR to select key verification points in-plant as well as at key supplier locations to mitigate identified risks.

Major subcontract purchases were also reviewed for cost, schedule, and technical risks. Where significant risks existed, delegations for contract administration actions were formulated and coordinated with sister DCMA offices to provide the necessary level of oversight. Support Contract Administration Delegations were issued to nine DCMA sister organizations to help mitigate risks associated with the Shadow 200 UAV systems or components.

Communications Network

A communications network was established with the PI and the local and ex-

tended DCMA staff. Daily communications provided a proactive environment to resolve problems before they impacted the overall procurement. This communications network also was used to gather an independent view of the program that was provided via a monthly status report to the Project Manager (PM). This insight was an invaluable asset to the program according to Army Col. John Burke, Unmanned Aerial Vehicle Systems (UAVS) Project Manager.

Shortly after the TUAV Program Milestone III Decision presentation was held at the Pentagon on Sept. 25, 2002, it was announced that the Army's Shadow TUAV program would be the first Department of Defense UAV program to progress into the production acquisition stage. Given the history of UAV acquisitions, this was considered a welcome announcement.

"DCMA's administrative contract management with the prime contractor and our program office, link the day-to-day government program management with the contractor's ability to perform, saving travel and additional on-site personnel," Burke said. "The inside-the-plant location, long-standing familiarity with the prime contractor's processes,

financial management, and sub-contract management allow forecasting of cost and schedule instead of corrective actions. DCMA's national network of contract management offices is able to readily bring government oversight and inspection to sub-contract problems remote from the prime contractor's location."

IOTE and Delivery of Systems

Nearing delivery of the LRIP 1 systems for Initial Operational Test and Evaluation (IOT&E), a specific challenge was anticipated resulting from the lack of flight facilities at the primary point of manufacturing. AAI designs and produces the systems at their Hunt Valley, Md., location and ships them to the Fort Huachuca, Ariz., flight center for system demonstration (functional flight checks) and final acceptance.

The Maryland and Phoenix/Sierra Vista DCMA operations act as one to assure a smooth transition through the acceptance process. The established process provided closed-loop feedback of any system deficiencies that enabled quick implementation of changes in manufacturing or quality assurance methods. DCMA QARs at both locations were called upon to provide near real-time support to meet program needs and keep the project moving forward.

During IOT&E and delivery of systems to combat units, the program entered a new phase requiring operations and maintenance in addition to the ongoing preplanned improvements and ramp-up for full-scale production. DCMA's Administering Contracting Officer (ACO) initiated contractual vehicles to provide component spares and Repair of Repairables (ROR) as the operations tempo increased. These methods were developed via the IPTs to meet program needs in a timely and consistent manner. The program successfully completed IOT&E in April 2002.

Exercising Options for Nine Additional Systems

Delays in IOT&E created the opportunity for breaks in production between LRIP and the Full-Rate Production (FRP) decision. To maintain the production capability and avoid shutdown and restart costs, the program exercised options for nine additional systems over two fiscal years (designated LRIP FY01 and LRIP FY02). This level of production was determined to be sufficient to carry through until a Milestone III decision could be made to progress into FRP.

DCMA used this opportunity to incorporate many lessons-learned from IOT&E and refine its surveillance approach. Where the supplier had demonstrated process maturity and capability, DCMA refocused attention to higher-risk areas. The DCMA ACO also modified the system Contract Line Item Numbers (CLINs) to sub-CLINs for system-level components so that components could be delivered and tested independently from the remainder of the system for the subsequent nine LRIP systems. This allowed flexibility of mixing assets within the systems to support flight testing and deployment.

Call for Independent Review

Also, the UAVS PM requested that DCMA have an Electrical Engineer perform an assessment of the maturity of the production engineering and quality control processes involved in the procurement of the Remote Video Terminal Rugged Field Computer to curb sub-assembly impact on cost, schedule, and technical performance that might threaten project success. DCMA quickly coordinated with its sister office in Pittsburgh to complete this task. With the insight of the in-plant QAR at the subcontractor facility assisting the engineer, an independent view of the production engineering and quality control processes was provided to the UAVS PM

in just 16 calendar days, which included a conclusion and recommendation.

Preparing for Milestone III

After the deliveries of the LRIP FY01 systems, in preparation for the Milestone III decision, a series of Production Readiness Reviews (PRRs) were scheduled.

Throughout its support of the Tactical Unmanned Aerial Vehicle program, the Defense Contract Management Agency has served as a bridge between the customer and suppliers; the Agency's intimate knowledge of the industrial base enables it to deliver great customer service.

From April 2002 to August 2002, reviews were held at each of the major subcontractors' facilities. Fact-finding sessions were also held at the prime contractor's facility. During each review, DCMA participated along with program office staff and provided insight and professional expertise based on their knowledge of that vendor's processes and their risk associated with cost, schedule, and technical performance. These reviews culminated with the formal PRR held in August 2002 at AAI Corp. DCMA participation included PST members as well as the local DCMA deputy commander. The review was successful and received the endorsement of the local DCMA commander.

Concurrent with the PRR activities, the team entered into an alpha contracting process in preparation for awarding the FRP contract. Continuing in the IPT tradition, the Statement of Work (SOW), specification changes, schedules for performance-based payments, and engineering and logistical support SOWs were developed. The team members used this opportunity to apply lessons-learned from the earlier program phases to provide a smooth transition from LRIP to FRP.

Milestone III Decision

The TUAV Program Milestone III Decision presentation was held at the Pentagon on Sept. 25, 2002. Attesting to the spirit of teamwork on the project, the DCMA Maryland commander and PI were requested to participate by the PM. During the review, DCMA's contributions to the success of the project were noted. Shortly after the presentation, it was announced that the Army's Shadow TUAV program would be the first Department of Defense UAV program to progress into the production acquisition stage. Given the history of UAV acquisitions, this was considered a welcome announcement.

FRP Contract Awarded

The FRP contract was awarded to AAI Corp. on Dec. 27, 2002, exactly 36 months to the day after the exercise of the first LRIP CLIN. DCMA continues its responsibility to ensure its industry partners fulfill their contractual obligations, and continues to lead the way to efficient and effective business processes. Throughout its support of the TUAV program, the agency has served as a bridge between the customer and suppliers; the Agency's intimate knowledge of the industrial base enables it to deliver great customer service. DCMA enables the warfighter to win!

Editor's Note: The author welcomes questions or comments on this article. Contact James.Harrington@dcma.mil.

"Very interesting. Overall a very good conference"

Lieutenant Colonel Gregory Hoscheit PhD, Chief C4I Division, US Army Space &

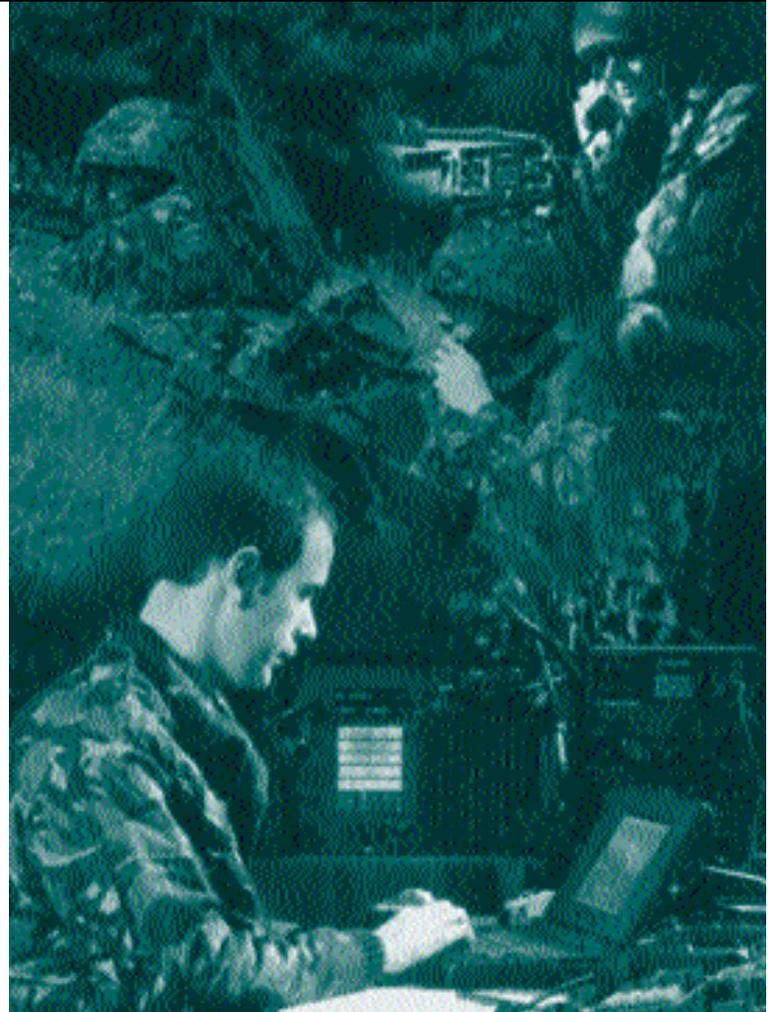
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Supporting Operation Iraqi Freedom

CAPT. JAMES O. MCLINNAHAM, USA • DR. DENNIS G. BEELER

As far back as 1993, DoD had a vision that handling tough diagnostic jobs would entail the use of experts who may be on the other side of the world from the weapon system being diagnosed. In February 1993, Program Executive Office Air Defense, and the Office of the Secretary of Defense signed a Memorandum of Agreement to use PATRIOT as a test bed for what was to become the Integrated Diagnostics Support Demonstration (IDSD) program. The IDSD program, which integrated Commercial-off-the-Shelf (COTS) and Government-off-the-Shelf (GOTS) technology, was tested over a three-year period using tactical PATRIOT systems in both CONUS and OCONUS. Drawing on high-technology experience from PATRIOT, other systems, and the commercial world, IDSD integrated satellite communications; expert system technology; remotely controlled Test, Measurement and Diagnostic Equipment (TMDE); electronic publications; digital video; and computerized data acquisition.

In 1996 the IDSD program, upon successful completion, transitioned into what is now known as the Integrated Diagnostics Support System (IDSS). Between 1996 and 1998, IDSS underwent another series of unit tests, which stressed the technology from the soldiers' point of view. From the beginning of the IDSD/IDSS program, acceptance of the concept of improving maintenance by utilizing technology steadily



PATRIOT Integrated Diagnostics Support System (IDSS) Technology—Experts a world away help keep Operation Iraqi Freedom PATRIOT systems up and running.

improved. The overall IDSS evaluation demonstrated that integrating the basic building blocks of personal computers, test equipment, and communications provided a framework for effective system support and low-cost growth of additional capabilities.

Results of the IDSS evaluation indicated that the goals for maintenance enhancement could be attained, and that soldiers were very enthusiastic about using these new tools and technology. Access to up-to-date information was

found to be instrumental in returning weapon systems to an operational status. Computers normally used to assist in the troubleshooting and analyzing of data were also found to potentially reduce errors and speed up procedures.

Initial Fielding of IDSS

From Oct. 26, 1999, to Nov. 5, 1999, the PATRIOT Project Office (PPO) conducted an initial fielding at Fort Bliss, Texas, of the IDSS technologies to the Ordnance Missile and Munitions Center and School (OMMCS) Training De-

McLinnaham is the Assistant Program Manager for Logistics assigned to the Lower Tier Project Office, Air and Missile Defense, Huntsville, Ala. He is Level-III certified in Contracting, and Level-II certified in Program Management. *Beeler* is the Integrated Diagnostics Support System Division Manager for CAS, Inc., Huntsville, Ala. He holds a B.A. in Business, an M.S. in Contract and Acquisition Management, and a Ph.D. in Business Administration.

tachment. On Oct. 20, 1999, the PPO, now a part of the Lower Tier Project Office (LTPO), received a final go-ahead from the OMMCS Commandant that set the stage for fielding to the Training Detachment.

The fielding effort began with disassembly of seven PATRIOT Automated Logistics System (PALS) AN/PSM-80 (V)1 computers in order to install sound cards and Institute of Electronic and Electrical Engineers 488.2 Instrument Interface cards, which provide audio and instrumentation support for the various IDSS functions. The computers were then re-assembled, and upgraded hard drives with the IDSS software enhancements were installed. The new software includes Microsoft Windows '95 Operating System; Interactive Authoring Display System based on PATRIOT Interactive Electronic Technical Manuals; Procomm by Quarterdeck to allow data file transfers using the Single Channel Ground/Airborne Radio System tactical radios; Symantec pcAnywhere for file application sharing and remote access and control; and Microsoft NetMeeting to facilitate voice communications among nodes on the new PATRIOT Local Area Network (LAN).

The second week of the process consisted of detailed training for personnel from OMMCS and Raytheon Training Systems on the use of the entire IDSS system. IDSS field analysts began the session by giving the students a detailed overview of the IDSS programs. Following the overview, they taught each student the process of setting up the LAN, and how to use the IDSS system using the latest technology. The students were also taught the setup of the required modernized TMDE used in the performance of the Computer Aided Procedures developed by CAS, Inc., specifically for the IDSS program. They also demonstrated the capability of being able to remotely control the test equipment and monitor troubleshooting efforts from other locations external to the unit.

In early 2000, the LTPO decided to upgrade the older computers to new

The overall IDSS evaluation demonstrated that integrating the basic building blocks of personal computers, test equipment, and communications provided a framework for effective system support and low-cost growth of additional capabilities.

Dell 7500 laptops. To that end, they initiated procurement and obtained the new Dell laptops as replacements for the PALS computers. This represented a major upgrade for the soldier in the field, since the new Dell laptops had a newer operating system, more memory, and larger hard drives.

Expanding and Applying the IDSS Technology

During Desert Storm, the limited data that were recorded by non-tactical portable data recorders and other prototype equipment in the PATRIOT systems had to be sent back to the States for analysis via courier service or shipped via Federal Express. This method of getting data back for analysis took anywhere from two to 14 days, depending on the method used. Problems also existed due to more stringent import/export controls. It became apparent early on that a method was needed to expedite the data from remote locations anywhere in the world back to the analysts in the United States.

IDSS personnel from CAS, Inc., took this need to the CAS system engineers and asked for assistance in resolving this

issue. System engineers using IDSS technology designed a secure satellite communications system capable of transferring the data from remote locations back to CAS servers. Once this was in place, the data-reduction analysts were able to download the necessary data from the servers located in the Air and Missile Defense Data Analysis Network (AMDAN) facility. This new methodology provides the capability for sending data, voice, and video in a secure mode to the central AMDAN facility.

Not only does this technology provide the logistical data needed, it also provides a wealth of operational information for the analysts. Embedded Data Recorder (EDR) data can provide such information as whether or not a particular engagement was successful (and if not, why?). If anomalies exist, the data-reduction analysts will be able to detect those anomalies and system engineers will be able to provide feedback as to corrective action needed. This corrective action may be in the form of a software improvement to a particular item within the system or to support the issuance of a field bulletin back to the units in the field.

The EDRs, when available, enable evaluation to determine specific aspects of functional areas of hardware and software as well as overall system effectiveness. Without this data, critics could argue, as they did after Desert Storm, that PATRIOT was not effective. However, the greatest benefit of recorded data is in the investigation of anomalous events. Recorded data can be quickly distributed to analysts at Raytheon, Lockheed Martin, CAS Inc., the LTPO Research, Development and Engineering Center, and other contractors to quickly isolate causes of phenomena that may be due to weather, atmospheric conditions, hardware faults, software problems, or operational procedures. This can lead to responsive changes that protect the force and enable warfighters to be more effective.

Without recorded data, analysts must speculate about observed problems, and in many cases it becomes impossible to

reproduce the anomaly or discover its cause. The net effect can be delays in adjusting to battlefield conditions, delays in correcting residual problems, and reduced combat effectiveness.

The commander and the soldiers are critical links in the potential benefits that can result from recorded data. The commander must emphasize the importance of data, and the soldiers must activate the recording of data and maintain the data recorders. To date, EDRs from Operation Iraqi Freedom have proven invaluable in assessing PATRIOT performance and in evaluating anomalous events.

In some cases the lack of recorded data has impacted analysts' ability to be as responsive as desired to some field reports. The EDRs are not considered mission-critical items. The troops can fight without data recording; however, the recorded data and the insight revealed on system performance could be critical to fighting effectively and surviving to fight tomorrow's battle.

This new technology provides literally a "foxhole-to factory" means of obtaining data in a timely manner, and the ability to use such data as necessary for the support of our soldiers in the field. The chart below depicts technology in place today in remote locations throughout the world and the methodology used in transferring EDR data.

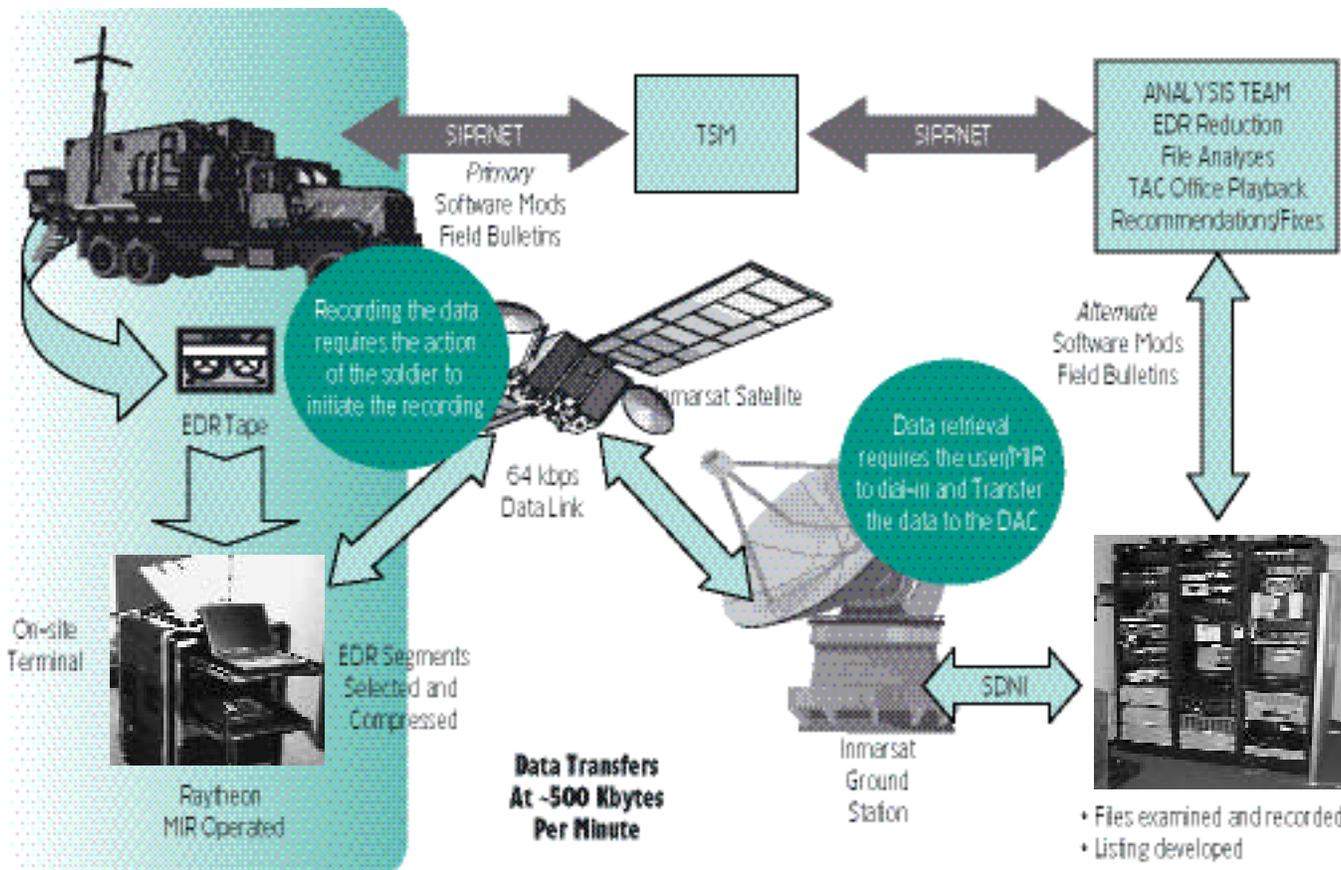
The IDSS program has truly been a team effort. PATRIOT's prime contractor, Raytheon, is responsible for the remote maintenance monitor and getting IDSS technology into the field. CAS, Inc., PATRIOT's System Engineering and Technical Assistance contractor, has played a major role in IDSS, assisting with the design and development of LANs, computer aided procedures for performing remotely controlled TMDE procedures, and secure satellite communications. At the U.S. Army Aviation and Missile Command Integrated Materiel Management Center, the Electronics Publications Division manages specialized publications needs. The logistics laboratory has been responsible for devel-

oping the video systems. Military users have played an active role in the definition of the system itself and how it should be used. Representatives of the allied nations using PATRIOT have been an integral part of joint efforts to guide the overall development of IDSS.

While challenges associated with integrating COTS/GOTS components exist, today's environment of funding constraints and streamlined acquisition dictates tailoring the use of commercial products and other integration of technologies as a mainstream approach to contain both cost and risk. Challenges will always exist to provide the soldier with tools, technology, and interfaces that are intuitive while at the same time imposing minimum impact to the existing support infrastructure. IDSS is meeting this challenge.

Editor's Note: The authors welcome questions or comments on this article. Contact them at James.McLinnaham@us.army.mil; or denis.beeler@cas-inc.com.

Current Data Transfer Process





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Measuring Performance to Drive Risk Management

We Need a New Yardstick—Objectives and Thresholds Aren't Good Enough

MAJ. NORMAN H. PATNODE, USAF

Although the performance of many acquisition programs has improved over the last few years, the fact is we still need to deliver useful capability to the warfighter faster and cheaper. How do we make this happen? By doing a better job of identifying, planning for, and managing the uncertainty that's inherent in every project. One way of doing this is to increase the use of risk management in DoD acquisition programs.

It seems we've been teaching risk management and emphasizing it within DoD for centuries. So how do we actually increase its use in our acquisition programs? Perhaps we should start by recognizing the wisdom in the age-old adage, "Tell me how you measure me, and I'll tell you how I behave." One way to create a behavior is to measure it. But how in the world do we measure a Program Manager's use of risk management in his or her program?

Program Performance

Let's start with how we measure the performance of programs today. What tool do we use to measure progress? Currently, we compare a program's cost, schedule, and technical performance to the threshold and objectives in the acquisition program baseline. That's the "yardstick" we use to measure a program's performance, and by extrapolation, the Program Manager's performance.

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What if in addition to, or perhaps even instead of requiring Program Managers to establish objectives and thresholds for cost, schedule, and performance, we asked them to determine the Worst Case, Best Case, and Most Likely Case for cost, schedule, and technical performance as shown below in Figure 1? What if we put those estimates into the baseline, and used them as the yardstick to measure a program's performance?

How is this going to help? Why should we abandon thresholds and objectives? Perhaps we shouldn't. However, it's worth looking at how the thresholds

and objectives are set. Do they actually bound the most likely case as shown at the top of Figure 2? How do we know? Without identifying and analyzing the risks, we can't be sure that in actuality the threshold and objective aren't located as shown in the bottom of Figure 2. Obviously, the risks depicted by these two pictures are not the same. What's needed is to determine the actual risks on the program.

Now, think about this for a moment—what does a Program Manager have to do to determine the Worst Case, Best Case, and Most Likely Case for cost,

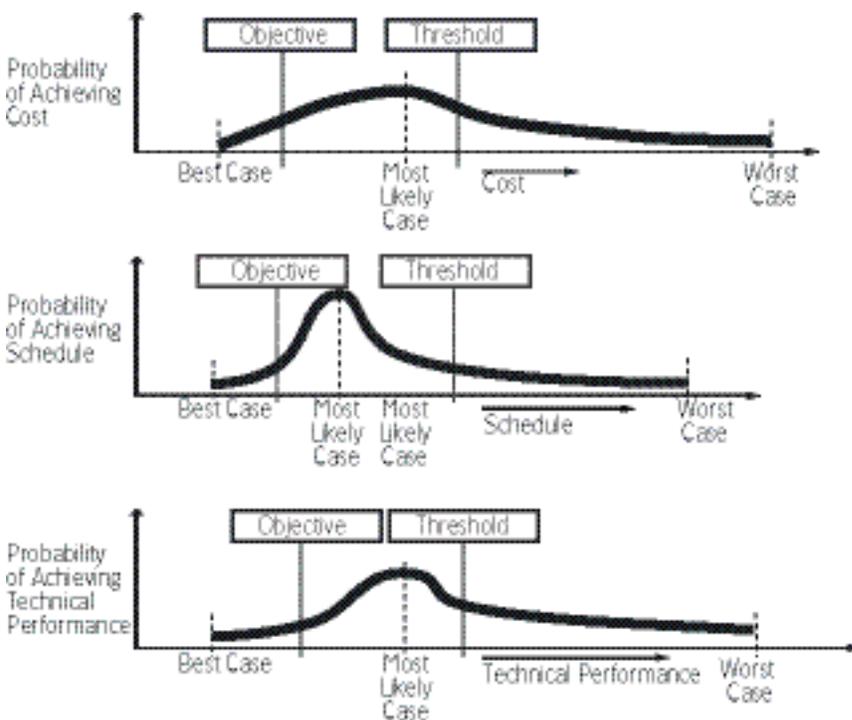


FIGURE 1. Cost, Schedule, and Technical Performance Estimates at Milestone A

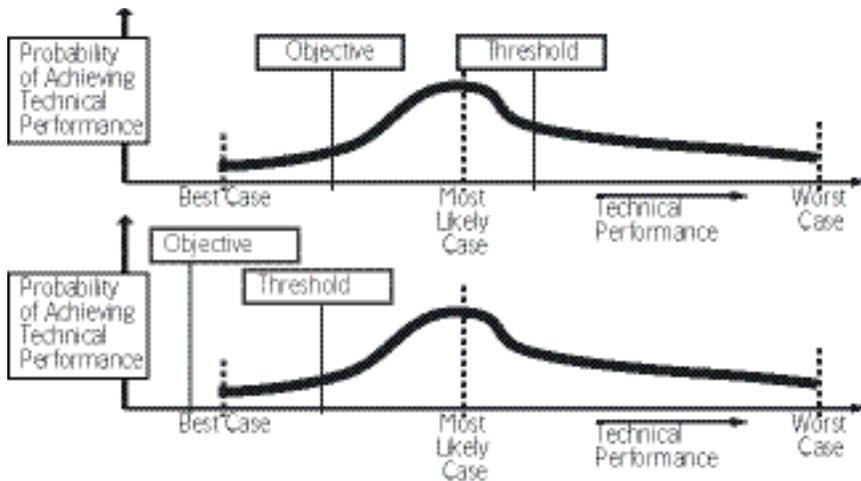


FIGURE 2. Setting Thresholds & Objectives—What is Reality?

schedule, and technical performance on his or her program? Can this be done without identifying and analyzing the risks on the program? Shouldn't the knowledge gained from determining these estimates give us the insight needed to better determine the risks on a program?

You see, by putting these estimates in the acquisition program baseline and using them as the yardstick to evaluate a program's performance, we drive exactly the behaviors we desire in our Program Managers. They will have to identify and analyze the cost, schedule, and technical performance risks on their programs using at least three different sets of assumptions. If we follow through by asking them to explain the assumptions behind each case, we'll see better estimates and better use of risk management in our acquisition programs.

Making it Work

Let's explore this further. How do we actually make it work? We start with the three estimates—Best Case, Worst Case, and Most Likely Case—for cost, schedule, and technical performance. For illustrative purposes, let's look at cost. Given the three sets of cost estimates shown in Figure 3, we then plot the program's current funding level relative to our estimates. From this information, we can assess the program's probability of success from the perspective of cost. To fully evaluate the program, we also need to determine the probability of suc-

cess from the perspectives of schedule and technical performance. We can do this by applying a similar process for both schedule and technical performance.

It's worth noting here that when we develop our Worst Case estimates, we're not talking about catastrophic headline events such as, "Alien Spacecraft Crashes into Shipyard—Will Take 100 Years to Rebuild." Rather, we want our Program Managers to capture realistic events, which, if they occur, will have severe consequences on the program.

Likewise, we wouldn't expect the Best Case estimate of technical performance to be based on the expectation that the Program Manager's nephew will successfully develop a workable application of cold fusion next year during his studies at Stanford. What's needed here are realistic estimates of both the risks and opportunities of the program.

In today's environment, it's not enough to just address risk—we also need to create and capitalize on opportunities. Can we double the technical performance by accepting a six-month schedule slip to integrate a new processor? Will \$680K spent up front on long-lead items allow us to get to IOC [Initial Operational Capability] 14 months sooner? There are many such opportunities on every program. We need our Program Managers to aggressively search

them out so we can better satisfy the warfighters.

Figure 4 presents a method to evaluate not just the investment needed, but also the potential return on our investment. Program risk is evaluated by analyzing changes in the Worst Case estimates of cost, schedule, and technical performance, as well as changes in the probabilities associated with those estimates. This is a direct application of risk analysis—what's the probability of an event

To drive the increased use of risk management in DoD acquisition programs, we should begin requiring our Program Managers to determine the Worst Case, Best Case, and Most Likely Case for cost, schedule, and technical performance on their programs.

occurring, and what's the consequence if it does?

The same approach is taken to evaluate opportunity—the potential return on our acquisition investment. How have the Best Case estimates changed over time? What are the assumptions behind the estimates for cost, schedule, and technical performance? What's our con-

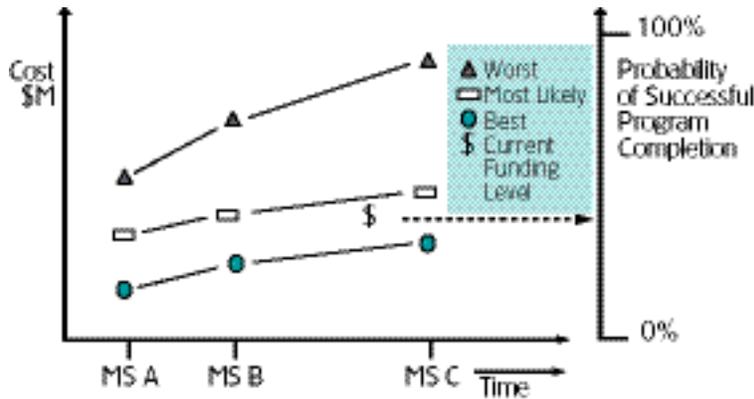


FIGURE 3. Tracking Cost from Another Perspective

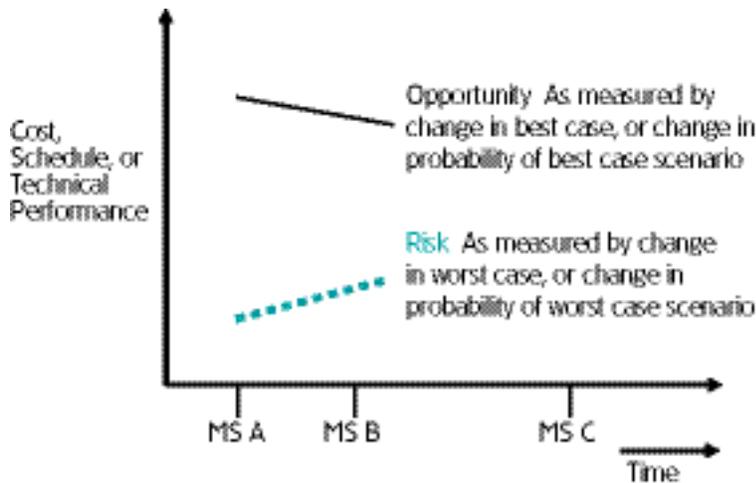


FIGURE 4. Risk vs. Opportunity

confidence level in these estimates? By evaluating the changes in the Best Case estimates and any changes in the probability of achieving those Best Case estimates, we gain a better perspective of the opportunities remaining in a program.

For a balanced perspective, we need to be sure to evaluate both risk and opportunity. The way to make sure our Program Managers assess risk and create and capitalize on opportunities is to put Worst Case, Best Case, and Most Likely Case estimates for cost, schedule, and technical performance in the acquisition program baseline, and use them as yardsticks to measure program performance.

Let's return for a moment to the idea of measuring a program's probability of success. We want to do more than just measure it; we want to drive behaviors that increase it. So what question should

our measurement answer? As shown in Figure 5, when Program Managers brief the status of their programs we want them to answer the question, "What specific actions are you going to take to increase the probability of success?"

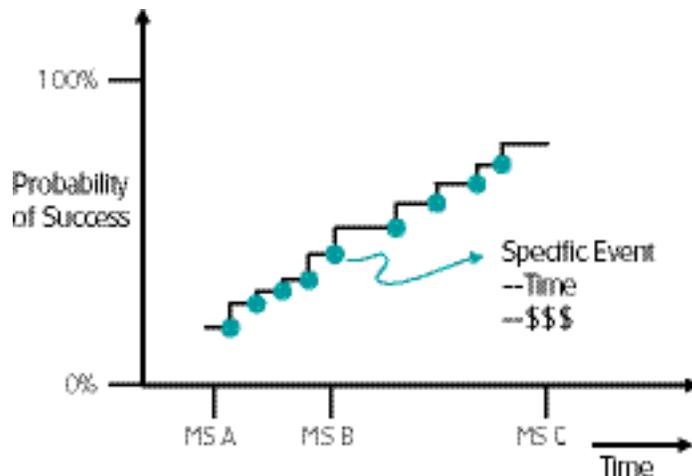


FIGURE 5. What is Required for Success?

It's important to recognize that each of the specific events shown in the stair-step diagram (Figure 5) comes at a cost in both time and dollars. However, after doing the risk analysis and building this information into the baseline, when budgets are squeezed and program funding has to be cut, using the stair-step diagram allows us to make smarter investment decisions about how best to provide capability to the warfighters.

That's the bottom line. We can't make wise investment decisions unless we fully understand the risks and opportunities. To gain this understanding our Program Managers must continually identify and analyze the risks and opportunities on their programs, and include the results of those analyses when they report the performance of their programs. To drive the increased use of risk management in DoD acquisition programs, we should begin requiring our Program Managers to determine the Worst Case, Best Case, and Most Likely Case for cost, schedule, and technical performance on their programs. By changing the yardstick, we'll change the behavior, and that's a positive step in moving the acquisition community toward better support of the warfighters.

Editor's Note: The author welcomes questions or comments on this article. Contact Patnode at Norman.patnode@dau.mil.

DAU Course Application— Get the Latest Facts

WHO MAY ATTEND DAU COURSES?

- Military Service members must apply under their Military Service, regardless of their assignment.
- Federal civilians apply under their affiliated Military Service, DoD, or non-DoD Federal Service category.
- Defense industry employees working on DoD contracts apply under their own category.
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HOW DOES THE APPLICATION PROCESS WORK?

Each DoD Military Service, e.g., Army, Navy, etc., is assigned quotas in DAU classes. Each agency, including non-DoD, has a specific training office that acts on applications. Each agency, including DoD non-military departments, funds training costs, such as TDY, assists with TDY orders, places its students in a wait or reservation status, or may disapprove an application. Students should contact their agency's POC if they have questions about the status of their application, why they are on a wait list, or how they should prepare their TDY orders. The POC list can be found at www.dau.mil/registrar/apply.asp at the bottom of the page.

HOW MUCH DO COURSES COST?

At this time, DAU does not charge tuition for its courses, except for foreign students who register under a Foreign Military Sales process. This category of foreign student, Department of Transportation-related agencies, industry, and non-DoD federal employees fund their own students' travel and per diem costs. For military and civilian DoD employees, there are no travel or per diem costs to the student or the student's agency to attend DAU courses as long as the proper procedures are followed. The Director, Acquisition Career Management Office (DACM) associated with each DoD agency will cover these costs, and students need to follow their processes.

WHAT ARE CLASS MODES?

Web-enabled courses are strictly computer-based training. The course schedule shows classes running from Oct. 1 to Sept. 30 since enrollment is constant throughout the fiscal year. Once approved for the course, students have 60 days to complete it, 28 days for BCF-102, 90 days for CON-101. After applying, students will receive various messages from "the system," including log on and password information. Students won't be able to log on until they receive a message saying they have a confirmed registration. Students will receive a message telling them whom to contact in case of technical difficulties or questions for an instructor. These messages should be saved for future reference.

Hybrid courses are composed of a Web-enabled phase, lasting about 45 days, followed a couple weeks later by a classroom phase lasting 5 days, except for PMT-352 which lasts 6 weeks. Students must apply for the B phase of a hybrid. They will automatically be enrolled in phase A when they receive a reservation in phase B. Students won't be able to start phase A until about 60 days before phase B starts (45 days for phase A plus 15 days after the Web-enabled phase ends and the classroom phase begins). This is done because the instructor wants the knowledge students acquired in phase A to be fresh in mind when they arrive to class. Students will receive a message telling them whom to contact in case of technical difficulties or questions for an instructor. These messages should be saved for future reference.

On-site or Residential Courses are traditional classroom courses. On-site courses are conducted at sites outside of the DAU campus network. Residential classes are held at a DAU regional campus.

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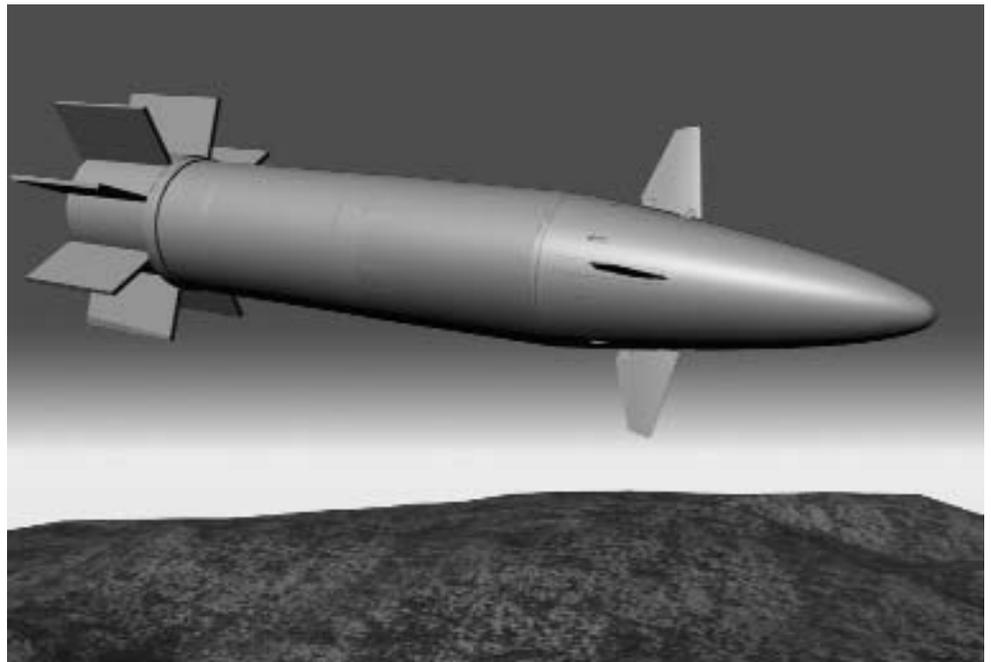
“Excalibur” Applying Unique Decision Support Tool to Explosives Selection

Quality Function Deployment (QFD)— A Step-by-Step Approach

RICHARD RHINESMITH • BRUCE WILLIAMSON • JOHN NILES

Since the invention of the cannon, the explosive fills used to drive lethal mechanisms have been the subject of ever increasing interest and study. Traditionally, munitions designers have used such explosives as Comp-B, TNT, or LX-14, depending upon the particular application. While these munitions passed various safety and rough handling tests in order to be certified for fielding, they may still experience a severe adverse reaction if caught in a fire or hit by bullets, fragments, or other battlefield threats. Indeed, many well-documented accidents/incidents happen over the years involving explosive ordnance.

In an effort to improve munitions survivability and safety, the Department of Defense (through the Joint Requirements Oversight Council) several years ago established a policy requiring all new munitions be capable of withstanding accidents, fires, or enemy attack. One method of addressing this requirement, the use of “Insensitive Munitions” (IM), including propellants and explosives, was mandated. Thus a new class of IM explosives has been developed over the past decade. Because these IM formulations differ somewhat from each other in a variety of ways (physical properties, explosive output, manufacturing process and cost, sensitivity and toxicity, etc.,) the explosive selection process



**Recently, the Army’s “Excalibur”
artillery projectile development
program, located at Picatinny Arsenal,
N.J., used a decision support tool
called Quality Function Deployment
(QFD) to support their explosives
downselect decision.**

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for a given munition has become more complex. How, then, do we determine which of these many explosives formulations is best to use for a particular munitions design?

To deal more effectively with this challenge, some munitions-design teams used Quality Function Deployment (QFD) as a decision support tool for their explosive downselect process. QFD provides an organized, step-by-step approach to comparing how well a particular solution addresses customer needs. Recently, the Army's "Excalibur" artillery projectile development program, located at Picatinny Arsenal, N.J., used QFD to support their explosives downselect decision. They established a multi-functional QFD team consisting of explosives design experts, munitions systems analysts and engineers, and a QFD facilitator. To assure all relevant parties were represented, team members were drawn from the Army (including the authors of this article), Navy, government, and contractor organizations.

The QFD Approach

The QFD team tackled the problem using the four-step process described in Figure 1.

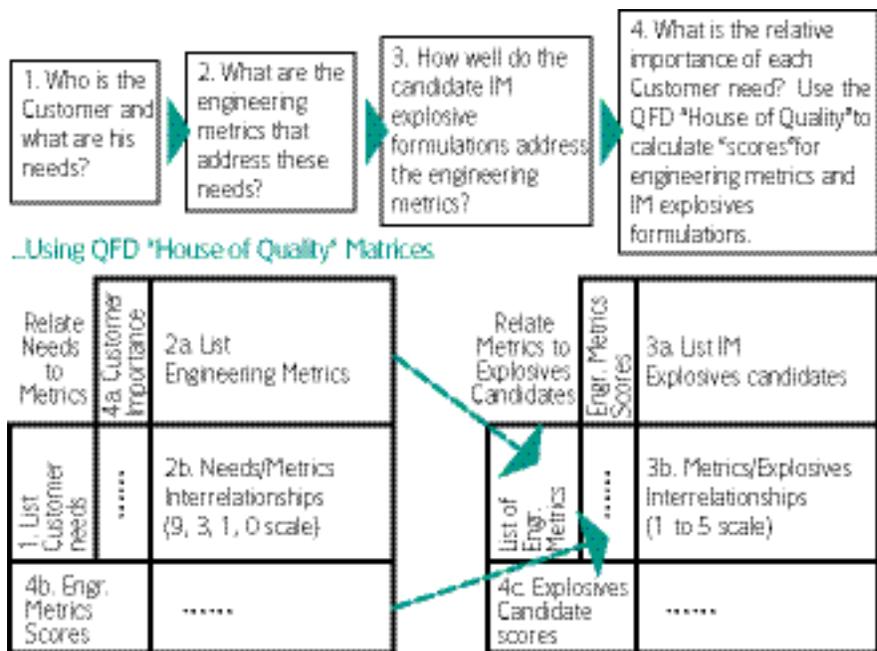
Step 1

Determine who the customers are and what they need. We decided there were two sets of customers involved with the IM explosive decision:

- The warfighter who uses the munition.
- The Program Manager who is responsible for developing and manufacturing the munition.

The user/warfighter's military needs are captured in an Operational Requirements Document (ORD), written specifically for this munition. The ORD provides a detailed description of the military environment in which the munition has to survive and operate safely and reliably. The Program Manager's needs were determined through discussions with the Excalibur design team and include such factors as technical

FIGURE 1: Four-step QFD Process for IM Explosive Selection



maturity, schedule risk, manufacturing complexity, environmental health concerns, and life cycle costs. An overall set of customer needs was created from the combined user and Program Manager requirements.

Step 2

Determine a set of engineering metrics that address every customer need. The key here is for engineers to be able to evaluate how effectively each metric addresses individual customer needs. One or more metrics must be determined that relate strongly to meeting each need. A metric is a characteristic or quality of the explosive that can be measured or assessed. A total of 43 engineering metrics were used to address Excalibur customer requirements.

A QFD matrix (also called the "House of Quality") is used to compare customer needs on one axis to engineering metrics on the other axis. Our QFD team filled in the matrix by comparing each metric to each need to determine where strong, moderate, weak, or no interrelationships exist. We assigned numerical values of 9, 3, 1, and 0 to represent strong, moderate, weak, and no interrelationships, respectively (using numerical values allows a quantitative evaluation to be made). Figure

2 shows a partial listing of this QFD matrix.

Step 3

Compare how well each explosive formulation under consideration satisfies the engineering metrics. To make an accurate assessment, our team first had to compile a database of technical information (consisting of physical and chemical characteristics, manufacturing methods, production costs, test results, toxicity, etc.,) on each explosive. Data on 13 explosives formulations (11 IM plus TNT and Comp-B "baselines") were collected. Subject matter experts on our team used a second QFD matrix to compare engineering metrics on one axis to explosives candidates on the other axis. A numeric scale of 1 through 5 was assigned to represent poor through excellent ability of the explosive to satisfy each metric. Figure 3 shows a partial listing of this second matrix.

Step 4

Ask customers to prioritize all their needs. The Excalibur Program representative fulfilled the role of the customer and ranked all the needs (by apportioning approximately 1,000 points among them). Once these rankings were inserted into the first QFD matrix, the relative importance, or score of every en-

engineering metric was automatically calculated. (The score for a given metric is the product of the customer importance times the interrelationship value with that metric summed down the metric column.)

Figure 2 (bottom row) lists these scores. The engineering metric scores were then transferred to the second QFD matrix, resulting in a calculated score for each IM explosives candidate (bottom row of Figure 3, p. 40). The

explosive with the “highest score” becomes the leading candidate for use in the Excalibur warhead.

Assessment of the QFD Selection Process

The process of collecting and analyzing the various sets of customer requirements, engineering metrics, and explosives candidates (together with the technical database) evolved over several months. We completed the final evaluation during an intensive two-day meet-

ing, where explosives and manufacturing experts as well as the Excalibur Program Manager representatives painstakingly examined, compared, and agreed upon all data entries to the QFD matrices. As a result of this analysis, the IM explosive candidate receiving the highest score in the QFD process was selected for further development as the Excalibur warhead explosive.

How did we feel the QFD approach worked in this application? Let’s look at

FIGURE 2: Excalibur Explosive QFD Matrix No. 1

Customer needs vs. engineer metrics. (9, 3, 1 corresponds to strong, medium and weak relationship between metric and need)			thermal & chemical characteristics							physical & mechanical characteristics					sensitivity characteristics												
			Customer Importance	thermal stability (DSC, STANAG-4513)	thermal stability (75degC (TB-700))	ignition temp (e.g. Woods metal bath) (MIL Std-650)	thermal conductivity	coefficient of thermal expansion	melting point	viscosity assessment	density	hydroscopic properties	inertible growth characteristics (MIL Std-1751)	oxidation characteristics (MIL Std-1751)	bulk modulus	yield strength	compressive strength	gap test -N.O.L. Large scale (MIL Std-1751)	impact sensitivity (MIL Std-1751)	ABL friction sensitivity (MIL Std-1751)	SCD (variable confinement cookoff test) (STANAG-4491)	Electrostatic Sensitivity (MIL Std-1751)	critical diameter (MIL Std-1751)	setback sensitivity assessment	risk of dangerous voids (Army & Navy Rqts)		
Operational Performance (67.5)	Effectiveness	penetrator performance	100																								
		blast/frag effects	200																								
	IM survivability (100)	withstand being in a fire Fast Cookoff	17	1		1	1	3	1												3						
		withstand being in a fire Slow Cookoff	17	3		1	3	9	1												9			1			
		withstand bullet and fragment impact	33									1	1	1	1		1									1	
		withstand sympathetic detonation conditions	34						1		3	1	1	1		3									1		
	Safety (100)	rough handling	25									3	3														
		weapon firing/hot tube	50	9		9	3	9	3			9	9	1		1									9	9	
		EMP, lightning	25									9	9														
	Reliability (175)	controlled storage	25	1				9	9			3	3														
uncontrolled storage		25	1				9	9			3	3															
hot/cold environments		25					9	3			3	3															
	fuzetrain detonation transfer	100									3	3	1		3							3					
Product Management (35.0)	Schedule risk (100)	2002 -test quantities needed	33																								
		2004 -LRIP quantities needed	33																								
		2007 Full rate production quantities needed	34																								
	Production safety (100)	production safety	40						3										9	9		9					3
		Processibility	30	3					3	3																	
		transportation safety	30																								
	Environmental health (75)	Environment hazard waste (air, water or soil)	19		9				3				3	3		1	3	3		3							
		toxicity - acute & subchronic/carcinogens	19										3														
		haz. explosive byproducts (test/train/war)	18																								
		haz. UXD byproducts	19																								
Life cycle costs (75)	Non-recurring costs	35						9					1		1											1	
	recurring costs	40						3	3																3		
Engineering Metrics scores = sum (cust Importance x metric interrelationship)			658	270	484	218	1629	1339	765	834	165	2175	1656	217	167	100	515	450	450	204	450	333	750	1002			

some of the perceived positives and negatives of the QFD analysis:

POSITIVES/STRENGTHS

- Consensus was reached as to the best explosives candidate for the Excalibur warhead.
- Facts and data replaced personality clashes as the basis for judgment.
- Decision related directly to customer needs—not to arbitrary decision making by managers or to vested interests.
- Politically sensitive decision was delegated to objectivity through the ability of QFD method to transfer discussions to a set of quantitative engineering criteria.
- Permanent record of the decision process was retained.

Negatives/Risks

- Considerable amounts of engineering, cost, and schedule data must be gathered upon which to base a decision. The commitment to do this must be made early-on, to minimize downstream schedule and cost impacts.
- It may require a significant expenditure of time, thought, and perseverance for a group of experts to assemble and complete the QFD matrices.
- The assignment of weighting factors to the customer's requirements/needs could have been conducted earlier in the process to allow more time for the QFD team to understand how the weightings might affect results. This would improve the decision process as far as which explosives candidates should be submitted for consideration. It will also allow time for the customers to better evaluate the consequences of their decisions.

For example, if the customers weigh any one requirement extremely high, it could render all other requirements essentially meaningless as evaluation factors. An initial sensitivity test could be run to see if any "overriding" requirements exist. The customers may not have intended such an override situation to exist and might want to attribute a greater balance among their needs. Care should also be taken to ensure that all customer groups are identified and given an opportunity to influence the weighting factors.

- Explosive candidate scores revealed very little difference existed (less than 2 percent separating the top four explosives scores), calling into question the significance of selecting one candidate over another. The reason for doing the QFD approach in the first place was that all 11 IM candidates appeared generally acceptable for this munitions application, and QFD was used to select among close alternatives. Since the munitions were generally similar in performance, it should be expected that their scores would reflect this fact. An unacceptable explosive would not be considered in the first place.

ments of performance. Ideally, all IM candidates should be evaluated/tested in the specific munition configuration of interest prior to conducting the QFD analysis. Due to perceived schedule and funding constraints, however, this is not always possible, so "expert assessments" of how effectively the IM explosive candidate might work (e.g., based on how well it performed in other munitions configurations) are used to predict expected performance.

If later testing demonstrates reduced or unacceptable performance of the selected candidate, the QFD matrix must be reviewed to determine the

In an effort to improve munitions survivability and safety, the Department of Defense established a policy requiring all new munitions be capable of withstanding accidents, fires, or enemy attack. The use of "Insensitive Munitions" (IM), including propellants and explosives, was mandated. Thus a new class of IM explosives has been developed over the past decade.

- In the absence of detailed, specific, or accurate data, best engineering/expert judgment must be relied upon (and even experts can be wrong). A total of eight explosives experts (representing the Army, Navy, government, and contractor organizations) were used to evaluate data for this effort during the final two-day meeting.
- Sometimes the performance of the IM candidates in the actual munition configuration can only be estimated, which can lead to erroneous assess-

next best candidate. It should not automatically be assumed that the second-highest-scoring IM candidate should be used, since it may be that both candidates have the same fatal flaw in their design.

An Explosive "Setback"

Recently, the IM explosive selected from the QFD rankings seriously failed a setback safety test and was discarded from further consideration in the Excalibur program. The question could be asked:

“Was this the result of a flaw in the QFD process?” We made a thorough review of the QFD data and found that matrices relating to the user need—“safety during weapon firing”—showed several engineering metrics that were strongly related to this need. The two most relevant to test failure were “setback sensitivity assessment” and “risk of dan-

gerous voids.” Since at the time the QFD was completed no IM candidate had conducted setback sensitivity tests in the actual Excalibur weapon configuration, this was an area where “expert assessment” played a strong role. Our experts based their opinions on the available data collected, which was based on the explosive’s past performance in

other munitions. Although no specific data were provided on setback test results, the “top explosive” candidate had claimed successful performance/selection in other munitions; i.e., it had been selected as the explosive fill for two Navy projectile programs. This prompted our explosives experts to assign a value of 4 (indicating “desirable, exceeds, pretty good”) out of a maximum of 5 as to how well this explosive satisfied both the set-

FIGURE 3: Excalibur Explosive QFD Matrix No. 2
Engineering Metrics and IM Explosive Candidates (Partial list)

Compare Engineering Metrics to Explosives Candidates		baselines		IM Explosive Candidates				PBXW-114	PBXN-112
		metric score	CompB	PAX-28	PAX-21	PAX-2A	PBXN-9		
thermal & chemical characteristics	thermal stability (DSC, STANAG-4515)	658	3	3	3	3	3	3	3
	Thermal stability @ 75degC (TB-700)	270	3	3	3	3	3	3	3
	ignition temp (e.g., Woods metal bath)/(Mil Std-650)	484	3	3	3	4	4	4	4
	thermal conductivity	218	3	3	3	3	3	3	3
	coefficient of thermal expansion	1629	4	3	3	4	4	3	3
physical & mechanical characteristics	melting point	1339	3	3	3	3	4	4	4
	viscosity assessment	765	4	4	4	3	3	3	3
	density	834	3	3	3	3	3	3	3
	hygroscopic properties	165	3	3	3	3	3	3	3
	irreversible growth characteristics (Mil Std-17)	2175	3	3	3	3	3	3	3
	exudation characteristics (Mil Std-1751)	1656	2	3	3	3	3	3	3
	bulk modulus	217	3	3	3	3	3	3	3
	yield strength	167	3	3	3	3	3	3	3
	compressive strength	100	3	3	3	3	3	3	3
	Gap test - NOL Large scale (mil std-1751)	515	2	5	4	4	3	4	3
sensitivity characteristics	impact sensitivity (Mil Std 1751)	450	3	3	3	3	3	3	3
	ABL friction sensitivity (Mil Std 1751)	450	3	3	3	3	3	3	3
	SCO (variable confinement cookoff test) (STANAG-4491)	204	2	2	2	2	4	3	3
	Electrostatic Sensitivity (Mil Std-1751)	450	3	3	3	3	3	3	3
	critical diameter (Mil Std-1751)	333	3	3	3	3	3	3	3
	setback sensitivity assessment	750	2	3	3	4	4	4	4
performance characteristics	risk of dangerous voids (Army & Navy Rqts)	1002	2	4	4	3	3	4	4
	Detonation velocity	600	3	3	3	3	3	3	3
	Brisance (plate dent test)	600	3	3	3	3	3	3	3
	Gurney constant	1800	3	2	4	4	4	4	4
IM tests (for other applications)	CJ pressure	600	3	3	3	3	3	3	3
	Accelerated aging	906	4	3	3	5	4	4	5
	Fast cook-off test	51	1	3	5	3	4	5	4
	Slow cook-off test	51	1	3	4	1	4	4	4
	Bullet impact test	99	3	3	5	3	3	5	5
	fragment impact test	99	1	3	3	1	2	2	1
	sympathetic detonation test	102	1	3	4	2	1	4	3
schedule risk	time needed to mature, facilitate, and produce explosive	300	5	4	5	5	5	4	5
	Materials availability	900	2	3.5	3	5	5	5	5
costs	Non-recurring costs: mature, and facilitate explosive	315	2	4	4	3	3	5	5
	Recurring costs: explosives production/LAP	360	5	5	5	4	4	4	4
	Recurring costs: O&S and demil	360	5	4	4	4	4	4	4
	Cost to remediate hazardous emissions	465	2	4	4	4	4	4	4
environmental/ toxic hazards	Hazardous production/LAP/UXO/ demil wastes (air, water, soil)	680	2	4	4	4	4	4	4
	Hazardous detonation byproducts	162	3	3	3	3	3	3	3
	cardiogenic emissions	509	5	5	5	4	4	4	4
	acute toxicity emissions	509	4	3	4	3	3	3	3
	sub-chronic toxicity emissions	509	4	3	4	3	3	3	3
Explosive Candidate Score			74707	79525	84381	85582	86109	86678	87117

Numbers 1–5 correspond to poor-to-excellent ability for the explosive to satisfy the requirements of the metric.

Highest scoring explosive

back sensitivity and risk of dangerous voids assessments (evidently, as with the stock market, past performance in other munitions may not be an indicator of future success). However, our assessment does not appear to have been unreasonable, based on the data available.

It does not appear that the QFD process was at fault, but it suffered from a lack of relevant test data in key areas. Moreover, the QFD matrices and data tables enabled an efficient post mortem of this problem to be conducted. One cautionary note: the second-highest-scoring IM candidate had essentially the same sensitivity data as the top-scoring explosive. This suggests it may not be the best alternative explosive candidate for Excalibur, and that additional testing together with a careful scrutiny of lower scoring candidates would be prudent.

Participant's Perspective

From a participant's perspective (provided by an explosives expert who participated in this QFD exercise), a number of issues contributed to the difficulty of this effort. A more rigorous systems engineering/testing approach would have been extremely helpful to more accurately tie the system requirements to the explosive characteristics used for the QFD.

For instance, some important engineering metrics were eliminated, or only roughly assessed, as a result of lack of detailed test data (for example, specific setback data). To await results of further testing would have forced a delay in the selection process and possibly impacted the Excalibur program schedule and increased costs. Having the additional data available, however, might have significantly improved this particular selection.

A more rigorous systems engineering approach would have benefited the selection process in several ways:

- The amount of data requested for customer needs versus engineering matrix could be reduced.
- The amount of time and effort expended for the evaluation could also be reduced.

- The timing of the final QFD data review should coincide with completion of data collection, rather than be prematurely set to coincide with a pre-set program schedule date. Prior determination of key design parameters and test data would result in a more accurate focus to the explosive selection process.
- Given the time to properly conduct data collection, the prioritization and deployment of customer/system requirements could be conducted in a more rigorous and quantitative fashion. This would reduce emphasis on qualitative judgment based upon experience (such as the setback data previously mentioned).
- Prioritization of customer needs should have been done much earlier in the QFD process, before the explosives candidates were provided. Lack of early knowledge of the key user needs may have resulted in a potentially best-choice explosives candidate not even being submitted for consideration.

The eight explosives experts assessing the QFD data may have been too many and resulted in an overly long and detailed evaluation time. The team should be more limited in size and comprise an odd number of individuals to avoid ties on ranking metrics and overly detailed discussions on minor variables.

To help reduce the long and arduous final QFD discussion and ranking period, explosives candidates should be limited to no more than two of each explosive type. A formal QFD pre-screening process, limited to a small amount of major engineering metrics, could be used for this activity.

After completion of the pre-selection process, some critical safety and performance tests should be run on the remaining candidates using actual system hardware to provide greater assurance of accurate correlation of engineering metrics to the end-item requirements.

Taken as a whole, these adjustments would allow for a more accurate deter-

mination of the best characteristics and energetic material to meet end-item needs.

Overall Application of QFD Methods

We believe the QFD process contributed to the Excalibur IM explosive selection by organizing customer needs and facilitating the assessment of how well engineering metrics meet these needs and how well the explosives candidates satisfy the metrics. However, the QFD process itself cannot make up for a lack of critical test data. When lack of data was noted, the options exercised were to: 1) eliminate the engineering metric for which data were unavailable, or 2) have technical experts "assess" how well they believed the explosive candidate would perform based on what data were available.

These assessments were apparently not accurate enough to reliably predict performance in certain key areas such as setback tests. The IM explosive candidate selected for further testing suffered a catastrophic test failure and was discontinued. The Excalibur program is following the QFD rankings to select its follow-up choice. While we are still learning about applying QFD to explosives selection, the transparent nature of the QFD process made it relatively easy to review the data after the fact as to possible causes of the setback test failure. The overall application of QFD methods to the explosives selection area should be viewed as a positive contribution.

As a final caution, keep in mind that QFD matrices and results are often unique to the particular set of users' needs being investigated. They should not automatically be applied to another customer's needs (even if they appear somewhat related) without a careful review.

Editor's Note: The authors welcome questions or comments on this article. Contact Rhinesmith at rrhine@pica.army.mil; Williamson at bwilliam@pica.army.mil; and Niles at jniles@pica.army.mil.

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In the past, defense industry organizations and personnel have needed, but not always received, the same acquisition training and education opportunities that are currently offered by the Defense Acquisition University (DAU) to government employees. The DAU Alumni Association (DAUAA) has recently begun a Corporate Sponsorship program to help DAU fill that gap. This program envisions a more balanced approach to education and training that will be mutually beneficial to both industry and the government.

Raytheon, Lockheed-Martin, Northrop Grumman, Boeing, and Rockwell-Collins have already become DAUAA Corporate Sponsors. We hope to add you as a sponsor in 2003.

Corporate Sponsorship of the DAUAA is open to any defense industry firm that practices business according to federal and state laws that prohibit discriminatory practices. Sponsors cannot be companies with whom U.S. law prohibits conducting DoD business. Foreign governments or their agents cannot participate in DAUAA sponsorship.

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- Employees of a sponsor may attend the symposium at the discounted member rates.
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- Sponsoring companies may have their name and logo in the annual symposium program and/or handouts.
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Sponsorship status becomes effective the date of receipt of your application, along with the nominal consideration/fee. DAUAA is a non-profit organization, and sponsorship contributions are tax deductible. DAUAA reserves the right to change or expand benefits at any time when approved by the governing DAUAA Board of Directors.

Although this sponsorship program is still in its early stages, companies are already putting ideas and suggestions into planning for the 2004 DAUAA Symposium.



Transformation of Acquisition Training within DoD

DAU Poised to Offer Students a 21st Century Transformed Training Environment

MARCIA RICHARD

I am truly proud to be an acquisition professional working within the Department of Defense (DoD) today. The professional education and training DoD has afforded me over the past 20 years, as well as my current studies at the Naval War College (NWC), have more than equipped me to take my place in the professional acquisition workforce. And after completing the National Security and Strategic Studies curriculum at NWC in June 2003, I will have fulfilled all requirements of the Defense Leadership and Management Program (DLAMP).

DLAMP is yet another fine developmental program designed to provide Department of Defense civilians extensive leadership and management training and education. Its goals are to develop future civilian leaders who clearly understand DoD's national security mission as well as strengthen communication between senior military and civilian leaders.

NWC—A Life-Altering Experience

Prior to attending NWC, my DLAMP mentor, Air Force Brig. Gen. Darryl Scott, Deputy Assistant Secretary for Contracting, told me that attending NWC would be a life-altering experience. Well, he was correct—I am permanently altered in that my insight into the mindset and needs of the warfight-



“Regardless of the challenges we in the acquisition training community face, we must always keep foremost in our minds that all of our efforts, large and small, must constantly be reassessed to ensure that we are always providing our very best in support of the needs of the warfighter.”

—Frank Anderson Jr.
DAU President

ers I support has increased exponentially! Since NWC is my third graduate program, I can honestly say that it is the most intellectually challenging and mentally stimulating of my educational experiences. For the first time in my 20-year career, I have a real opportunity to learn, share, and gain significant insight into the warfighters—the men and women who are my ultimate customers, and whom I support as a member of the Acquisition Education, Training, and Career Development (AET&CD) professional staff.

As a student in the NWC senior class, last trimester we studied National Security Decision Making (NSDM). In NSDM, we discussed many interesting topics relevant to DoD's strategy and force planning, executive decision making, and policy making and implementation today. We examined the way DoD did business in the past, how the Department currently does business, and explored the concept of *transformation*, and how DoD will do business and fulfill its various missions in the future.

Having entered the career field of acquisition training in 1992 as a Professor of Contracting with the Naval Center for Acquisition Training—now a part of the Defense Acquisition University (DAU) Mid-Atlantic Region—I can personally attest to the remarkable transformation in acquisition training. This

Richard is a Program Analyst with the Office of Acquisition Education, Training, and Career Development, Office of the Under Secretary of Defense (Acquisition, Technology and Logistics), in Alexandria, Va. Currently, she is completing National Security and Strategic Studies at the Naval War College in Newport, R.I. Prior to joining AET&CD in 2001, she worked as a Procurement Analyst and Professor of Contracting, Defense Systems Management College Norfolk Campus, in Norfolk, Va.

article seeks to share what I learned about the transformation of acquisition training not only from those NWC discussions, but also from two interviews I held with key acquisition executives.

DAU Transformation

Acquisition training within the Department of Defense has been and is transforming. The leadership of the DAU is determined to find new and improved ways to better serve the acquisition workforce and become a premier Corporate University. They are working side by side with their customers, developing the skill and know-how to provide just-in-time training for new and evolving practices and becoming more internally efficient by making data-driven decisions.

In January 2000, I served as a member of the DAU strategic planning team; from that time to now, DAU's transformation has been nothing short of remarkable. In January 2000, the University's transformation was in its infancy and since that time has fully matured. Currently, DAU has a Strategic Plan in place for the years 2002–2009, *Training Transformation (T2)*. As DAU President Frank Anderson has expressed on numerous occasions, "The strategic plan, the guiding strategy for managing the organization, must be a document that is continuously reassessed and updated. As long as we remember that, we are heading in the right direction. If ever we reach a point that we feel we've done everything correctly, that we're finished—that's when we are probably in trouble."

Strategic Relocation of Facilities

One of the first initiatives that DAU implemented was to strategically relocate its facilities (campuses) with major acquisition customers. Although this was a very intense process because of structural requirements as well as the physical relocation of personnel—both faculty and staff—the end result is a constant DAU presence co-located near commands with the largest concentrations of acquisition workforce members, which fosters closer professional relationships with the customers and, ulti-



"The mission of the acquisition workforce, including the acquisition training community, is ultimately to provide support to the warfighter, when and where required."

—Claude M. Bolton Jr.
Assistant Secretary
of the Army
(Acquisition, Logistics &
Technology)

mately, enables DAU to build speed and agility into the products and services it provides.

Corporate University

As previously noted, DAU is now a Corporate University. By definition Corporate Universities provide customers tailored information and learning aids *when they need it*. This in no way means that DAU will cease to provide Defense Acquisition Workforce Improvement Act (DAWIA) training. On the contrary, DAU's success in providing certification training that satisfies DAWIA acquisition career field requirements is one of the areas of which it is most proud.

Tailored Training

In a short video DAU recently produced, *DAU Fine Tuning*, Anderson states, "Sat-

isfying our core competencies, providing certification training is one area where we've got it right; we will continue to monitor and update those courses, as required." Throughout the video and during a recent interview I conducted with him in December 2002, Anderson emphasized that providing tailored training (rapid deployment learning packages) with speed and agility on evolving practices such as evolutionary acquisition, will be a primary focus for DAU during 2003.

E-Learning

E-Learning is another area in which DAU is making tremendous progress. Anderson explained that in 1998, approximately 2 percent of the training provided by DAU was through e-Learning; in contrast, by 2002 70 percent of DAU graduates were participating in e-Learning to varying degrees. Although this is significant progress, he acknowledged that DAU is still learning and growing in this area, and added that DAU will also be establishing its Virtual Performance Learning Center this year.

Communities of Practice

The leadership throughout DoD has placed a lot of emphasis on the need for more collaboration throughout the Department. The establishment of Communities of Practice (COPs), which are online portals that subject matter experts from within DoD, civilian agencies, and industry can go to share information on various acquisition and acquisition-related topics, is but one attempt by DAU to foster and support the collaboration effort.

Metrics

Another area that DAU will be focusing on as a part of its transformation is efficiency. Proper balance is always crucial and although DAU has many exciting challenges ahead, it will also strive to become as efficient as possible, especially during a time of limited resources and budgetary streamlining. Anderson intends to make DAU a data-driven, decision making environment using metrics to support those decisions. Data-driven decisions were not necessarily the way DoD in general and

DAU specifically operated in the past. "All leaders must use their knowledge, experience, and intuition when making decisions," he stated, "but smart leaders use knowledge, experience, intuition, and *metrics*."

"Regardless of the challenges we in the acquisition training community face," Anderson concluded, "we must always keep foremost in our minds that all of our efforts, large and small, must constantly be reassessed to ensure that we are always providing our very best in support of the needs of the warfighter."

Customer Perspective

Claude M. Bolton, Assistant Secretary of the Army (Acquisition, Logistics and Technology) and Army Acquisition Executive represents the Army's acquisition workforce—customers—who receive training/certification through DAU. His diverse background affords him the ability to assess situations from various perspectives. Bolton was a warfighter and aviator tested in combat, served as Commandant of the Defense Systems Management College (DSMC), directed the Air Force Materiel Center (AFMC), and is a 1986 graduate of the NWC, to name a few.

"This is an unprecedented time of transformation," Bolton told me. "The Army has not seen such change in over 100

years." Although a great deal of progress is being made, he is concerned that we may be slipping in the acquisition community. He believes that rescinding the DoD 5000 series may be a part of the challenge because the 5000 gave managers direction on how to manage—and now that guidance may no longer be relevant.

Bolton supports DAU's e-Learning strategic direction in that, because of TDY constraints, incremental packages of tailored learning, delivered via e-Learning, represent a vehicle that the Army and DoD as a whole will have to perfect and utilize more in the future.

Noting that some new, innovative, and exciting changes are going on within DAU/DSMC, Bolton added that he would like to see a course(s) on "Lead Systems Integration" and "Other Transaction Authority" as opposed to all Federal Acquisition Regulation (FAR)-based training.

Returning to his main focus during the interview—the warfighter—Bolton concluded, "The mission of the acquisition workforce, including the acquisition training community is ultimately to provide support to the warfighter, when and where required."

More Joint Operations

In March 2003, I entered my last trimester at Naval War College, "Joint Military Operations (JMO)." Jointness has been a constant theme throughout our seminars, and a topic we as students have debated and discussed extensively. Our discussions invariably concluded that the Services as we currently know them will not soon disappear and our armed forces become one Service, but most if not all of us agree that more joint operations will and should take place in the future. My personal conclusion is that we will see more joint operations, more joint acquisitions, and more training on developing joint policies, processes, and procedures for joint acquisitions.

Finally, although we are allocating energies and monetary resources for transformation throughout the Department, we are not preparing for the future at the expense of maintaining our current military superiority. It is still very reassuring for me to learn first-hand at NWC that *Air Dominance*, *Forward Naval Presence*, and *Boots on the Ground!* are still the warfighting strategies upon which our acquisition and procurement efforts must focus.

Editor's Note: The author welcomes questions or comments on this article. Contact her at marcia.richard@dau.mil.

IN MEMORIAM

Paul O. Ballou Jr.

The Defense Acquisition University has received word of the death of Dr. Paul O. Ballou Jr., in mid-June 2003, from a sudden massive brain hemorrhage. Often referred to around campus as the "Kentucky Colonel," Paul joined the Defense Systems Management College (DSMC) as a Professor of Contract Management and Financial Management (1978-79), and in 1980 became a Professor of Multinational Program Management.

He came to the college with more than 26 years of acquisition experience in buying and selling for major companies and government agencies. Prior to joining DSMC, he was Acquisition Manage-



ment Officer for the U.S. Army Information System Selection and Acquisition Agency; Director of Acquisition, Defense Mapping Agency Systems Center; and Director of Acquisition, National Defense Stockpile at the General Services Administration. He had extensive industry experience with the Hughes Aircraft Company and United Technologies Corporation in the fields of finance, contracts, and administration.

Paul was interred in Kentucky in June 2003. He is survived by his wife, Patricia, son Paul III, and daughter Jane.

DAU Board of Visitors Welcomes Six New Members

KELLEY BERTA

April 15, 2003, was a historic day for the DAU Board of Visitors (BoV). It was the first time a full day of orientation briefings was offered to a class of incoming BoV members. Dr. J. Ronald Fox, BoV Chairperson, and Frank J. Anderson Jr., DAU President, welcomed six new members to the advisory board: David J. Berteau, Syracuse University; Dr. Priscilla H. Douglas, PHDouglas and Associates; Nicholas W. Kuzemka, Lockheed Martin; John F. Phillips, Honeywell; retired Air Force Gen. Bernard P. Randolph; and retired Army Gen. William G. T. Tuttle.

Anderson opened the orientation day with an explanation of the transformation of DAU from a classroom-based institution of the 20th century to a customer-centric learning organization of the 21st century. With DAU's vision and mission aligned with the goals of the Secretary of Defense and the Under Secretary of Defense (Acquisition, Technology and Logistics), Phase 1 of the

transformation focused on the organization and Phase 2 with processes. Phase 3 will be a period of harmonization, integration, and improvement.

Following Anderson's introduction, the members were provided a virtual tour of DAU's five regional campus facilities. The director of each staff component of the University presented an overview of the mission and functions of his or her component, and the Dean of the DSMC School of Program Managers discussed the executive and international training responsibilities of his organization.

On April 16, the current board members joined the new consultants for the standing quarterly BoV meeting. In addition to those listed previously, board members include: Charles E. "Pete" Adolph, SAIC; R. Stephen Ayers, SAIC; Dr. J. Ronald Fox, Harvard University; Stephen R. Mercer, Boeing; Robert J. Murray, The CNA Corporation; and James L. Sanford, Northrop Grumman. The board bid farewell to three long-

standing members: Peter DeMayo, Consultant; James M. Gallagher, The Dayton Group; and Eric M. Levi, Consultant.

Since its inception as an academic institution, DAU has been subject to governance and guidance from the BoV on organizational, administrative, and curricular matters. All BoV members, past and present, have been invaluable to the foresight, planning, and progress of DAU as an institution. Although the departure of three longstanding members will leave an undeniable void, DAU and the remaining BoV members look forward to continuing their association with former members, and working with the new members on several challenging initiatives the University is undertaking in 2003.

Editor's Note: Berta is the Director, Outreach and Communications, Strategic Planning, Defense Acquisition University, Fort Belvoir, Va.



Seated from left: James L. Sanford, Northrop Grumman; Dr. J. Ronald Fox, Harvard University; Frank J. Anderson Jr., DAU; Peter DeMayo, Consultant.

Standing from left: Retired Army Gen. William G.T. Tuttle Jr, Consultant; David J. Berteau, Syracuse University; Robert J. Murray, The CNA Corporation; Eric M. Levi, Consultant; Charles E. "Pete" Adolph,

SAIC; Dr. Priscilla H. Douglas, PHDouglas and Associates; retired Air Force Gen. Bernard P. Randolph, Consultant; John F. Phillips, Honeywell; R. Stephen Ayers, SAIC; James M. Gallagher, The Dayton Group; Stephen R. Mercer, Boeing; Nicholas W. Kuzemka, Lockheed Martin.

Photo by Army Staff Sgt. Kevin Moses

Spiral Development and the F/A-18

Parallels from the Past Emerge in Spiral Development of the F/A-18A through F Variants

REAR ADM. (SEL) JEFFREY A. WIERINGA, USN

Spiral development is being invoked as the preferred current method of procuring weapon systems. Although it is generally accepted that spiral development was first articulated by Barry Boehm in 1988, some of its distinguishing features, such as a cyclic approach for incrementally growing a system's degree of definition and implementation, can be found in the archives chronicling the Navy's development of the F/A-18 strike fighter, with particular attention to this aircraft's most recently enhanced variants—the single-seat F/A-18E and the dual-seat F/A-18F Super Hornets.

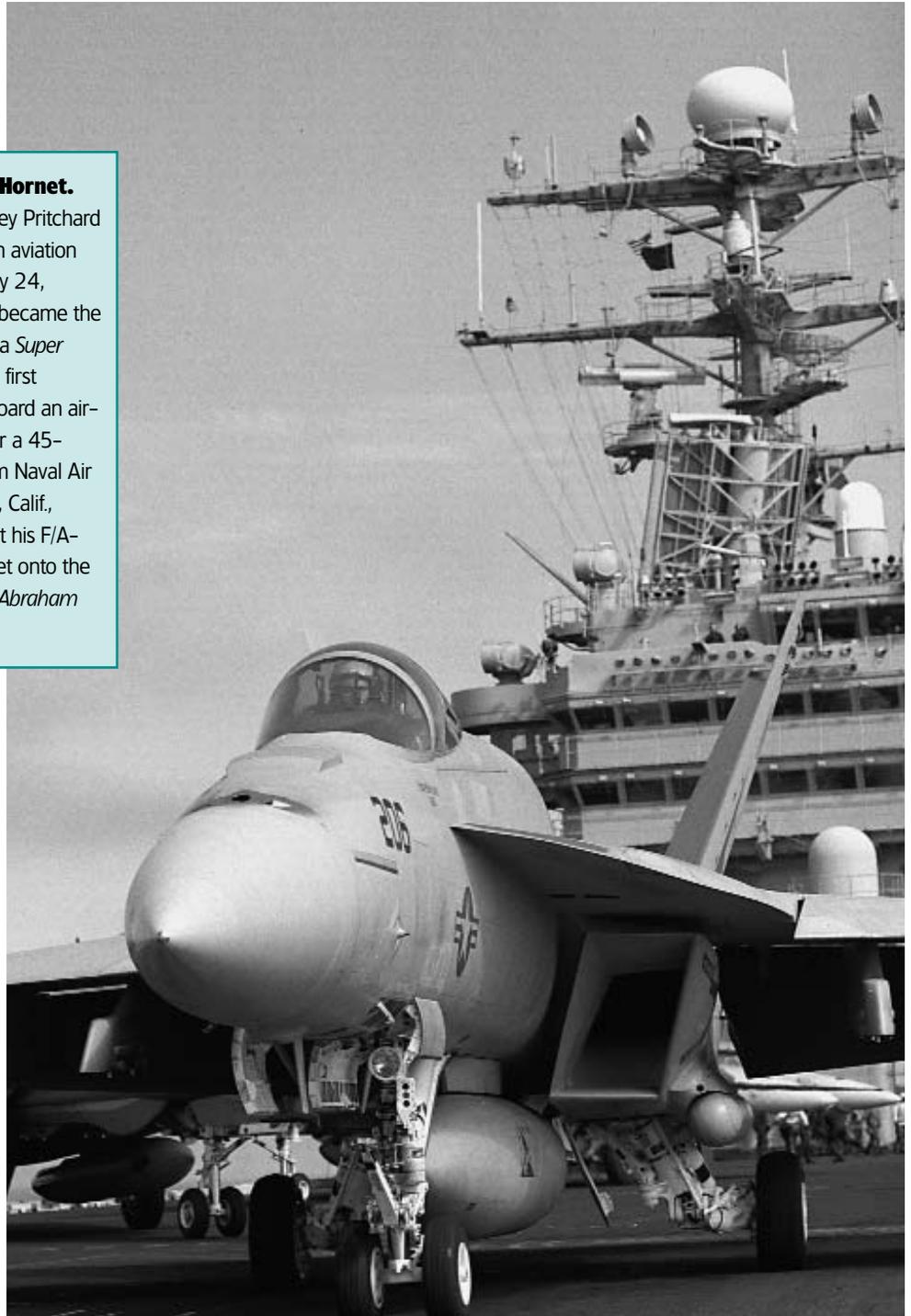
F/A-18E Super Hornet.

U.S. Navy Lt. Corey Pritchard earned a place in aviation history books July 24, 2002, when he became the first pilot to land a *Super Hornet* during its first deployment onboard an aircraft carrier. After a 45-minute flight from Naval Air Station Lemoore, Calif., Pritchard brought his F/A-18E Super Hornet onto the deck of the *USS Abraham Lincoln*.

Historical Background

Parallels from the past may be worthy of study by those in charge of spiral development in the future. Interesting comparisons can be made between the Navy's developmental efforts with F/A-18E/F, a truly evolutionary development, and more revolutionary developments in weapon systems attempted over the years. Those who are to implement spiral development in the future might gain valuable insight from a study of the F/A-18E/F. Even the original F/A-18A, which

Wieringa is temporarily assigned to Program Executive Officer, Tactical Aircraft Systems, Patuxent River, Md.



first flew on Nov. 18, 1978, was in some ways a precursor of spiral development. It had started out with the objective of producing a truly multimission strike fighter, one that could replace both the aging F-4 Phantom in the fighter role, and the aging A-7 Corsair II in the light attack role. In addition to being truly multimission, the F/A-18 was also designed to be affordable, not only in developmental and acquisition cost, but even more importantly in life cycle cost where the key to success was a significant improvement in both reliability and maintainability. All of these goals were achieved.

The original F/A-18 continued to evolve successfully, partly because it was designed from the outset with future improvements in mind. Pre-Planned Product Improvement (P3I) was that era's buzzword-equivalent of spiral development. The P3I purists, however, insisted that the F/A-18 wasn't an authentic example of P3I because its designers, developers, and managers got started without really knowing for sure precisely which enhancements it was to incorporate or exactly when or how they were intended to be incorporated.

Today these very uncertainties are considered by some to be highly useful traits in spiral development. One authority on spiral development puts it this way: "When you do spiral development, you do not know ahead of time when you start at the beginning of spiral zero where you're going to come out. As you resolve the risks, you may even redesign what you are trying to accomplish."

Digital Architecture

One of the keys to the Hornet's success, and to that of the F/A-18E/F Super Hornet as well, was its digital architecture. The ingeniously designed multiplex bus, with its ability to integrate the evolving software of the mission computer, the flight control computer, and approximately 30 additional microprocessors located throughout the airplane, gave the original F/A-18 the potential for more than 20 years of growth and enhancement in weapons, sensors, countermeasures, and other systems. It had

spiraled so vigorously that by the time the larger, longer range, more survivable, more versatile Super Hornet came to be designed, 80 percent of the Hornet's avionics had been updated so successfully that they could be used for the Super Hornet. By this time, however, the original F/A-18A/B had spiraled up through C and D versions and no longer had the electrical, cooling, and volume capacity to handle all the new weapons, sensors, countermeasures, and other systems that were becoming available for the Super Hornet.

Just as the original Hornet depended on spiral development for its success, the Super Hornet has followed the same path. The first Super Hornets, deployed on board *USS Abraham Lincoln* last summer, signify simply the first turn of their own spiral, but a very hefty segment at that: they embody the additional range, payload, and bringback that were the aircraft's initial objectives; they incorporate considerably greater survivability than their predecessors; and they are capable of serving as airborne tankers.

Even though the F/A-18E/F and its evolving systems and subsystems may not fit everyone's definition of evolutionary acquisition and spiral development, anyone attempting a spiral development in the future would benefit from a study of them.

Other Systems/Subsystems

One of the more interesting subsystems of the F/A-18E/F is its Integrated Defensive Electronic Countermeasures suite. An outgrowth of the countermeasure systems that evolved on the F/A-18A/B/C/D versions, it in turn will continue its spiral through a phased approach.

Block 1

Its Block 1 includes a proven jammer, the ALQ-165—an operationally successful jammer incorporated in late-model F/A-18C/D aircraft and now also included in the F/A-18C/D aircraft flying with the air forces of allied nations. Additional protection is provided by the ALE-50 towed decoy.

Block 2

In Block 2, the ALQ-165 will be replaced by the ALQ-214 radar frequency countermeasures system, a "techniques generator" that determines an appropriate signal to counter an attacking missile.

Block 3

In Block 3, the ALE-50 will be replaced by the ALE-55 fiber-optic towed decoy. With this combination, the ALQ-214 will generate an optimal signal to counter the incoming threat, to be transmitted by the ALE-55 towed decoy. The phased, spiral approach of the Super Hornet's electronic warfare capability is designed to increase survivability in proportion to the evolving threat.

Other systems and subsystems of the F/A-18A/B/C/D/E/F will be of equal interest to future spiral developers. The General Electric F400-GE-400 engine powered the original F/A-18 aircraft. On later model F/A-18C/D aircraft it was replaced by the F400-GE-402, the enhanced performance engine. Profiting from lessons learned in designing an engine for the A-12 program, General Electric developed a larger and even more powerful engine for the F/A-18E/F, the GE-414-400.

Parallel Evolutions

Parallel evolutions in radar, forward-looking infrared sensors, landing gear, weapons launchers, and reconnaissance systems for the Super Hornet each provide fascinating areas for explorations in spiral development, even though probably none of them would satisfy the precise philosophical criteria for this definition. But for those interested in "Applied" rather than "Theoretical" spiral development, the F/A-18 evolution from A to F models will provide a fertile field.

Because of the F/A-18E/F's carefully designed-in capacity for growth, each successive deployment of Super Hornets will see additional spirals of enhanced capability, primarily through the incorporation of still newer weapons, sensors, countermeasures, and other systems currently in test, under development, or simply on the drawing boards of aeronautical engineers.

REAR ADM. (SEL) JEFFREY A. WIERINGA

*F/A-18 Program Manager
April 2000—May 2003*

Rear Adm. (Sel) Jeffrey A. Wieringa's naval service began in 1973 through the Aviation Reserve Officer Candidate (AVROC) program. He graduated from Kansas State College, Pittsburg, Kan., with a Bachelor of Science in Physics in 1975. Following his commissioning as an Ensign in 1976, he was designated as a Naval Aviator in 1977.

Following A-6 *Intruder* training at VA-128, he reported to Attack Squadron One Four Five where he completed two cruises on board *USS Ranger*. His next assignment was to Air Test and Evaluation Squadron Five (VX-5) as an Operational Test Director for numerous bomb, missile, and fuze projects. This tour culminated with the Fleet introduction of the *Skipper II* missile with air wings on board *USS John F. Kennedy* and *USS Independence* stationed off the coast of Beirut, Lebanon.

After A-6 refresher training at VA-128 he reported to Attack Squadron One Six Five where he completed two cruises on board *USS Kitty Hawk*. During this tour he conceived and executed a program that established a tactics department within the squadron. As a result of his performance on this tour, he was selected as "The Outstanding Naval Aviator U.S. Pacific Fleet." Starting in July 1987, he was selected to attend the U.S. Naval Test Pilot School (TPS). He completed the curriculum as class leader for TPS Class 93, and was designated an Engineering Test Pilot in June 1988. His following tour was with the Naval Air Test Center, Strike Aircraft Test Directorate, as Ordnance Systems Department Head and project test pilot. His flight test responsibilities included ordnance carriage and separation as well as carrier suitability envelope expansion flights on A-6 and A-7 aircraft.

In July 1990 he was designated an Aeronautical Engineering Duty Officer and reported to the Naval Air Sys-

tems Command as the A-12 Avionics Systems Project Officer and later the AX Program as Assistant Program Manager (Systems Engineering) or "Class Desk Officer." In June of 1993 he completed F/A-18 flight training at VFA-106 and reported to Patuxent River Naval Air Station, Md., where he was assigned as the F/A-18 Project Coordinator. His responsibilities included the coordination of all F/A-18-related efforts throughout the Naval Air Warfare Center Aircraft Division.

Wieringa screened for selection as Deputy Program Manager, PMA-265 as the co-leader for the F/A-18E/F Integrated Program Team until July 1998. He then held the office of Executive Director for Operations in the Research and Engineering Department within the Naval Air Systems Command. Wieringa commanded the F/A-18 Program, PMA-265 from April 2000 through May 2003. Capping the numerous accomplishments during his command was the successful first combat deployment of the *Super Hornet* in Operation Iraqi Freedom and 250 F/A-18s. In May of 2003, he was selected for Rear Admiral (Lower Half).

Wieringa has flown 40 different types of aircraft, including the F/A-18F *Super Hornet*, accumulating over 4,000 flight hours and 534 carrier landings. His personal awards include the Legion of Merit, Meritorious Service Medal (two awards), Navy/Marine Corps Commendation Medal (four Awards), and the Navy Achievement Medal.



Even though the F/A-18A/B/C/D/E/F variants were designed without the conscious use of the invariant characteristics of the spiral development process, they did incorporate many of these characteristics. They employed in each cycle, concurrent rather than sequential determination of key artifacts: operational concept, requirements, plans, and design, thus avoiding premature sequential commitments. Each cycle took into consideration critical stakeholder objectives and constraints, product and process alternatives, risk identification and resolution, and stakeholder review and commitment to proceed, thus avoiding commitment to alternatives that were risky or unacceptable to stakeholders.

The level of effort and degree of detail in each activity within each cycle was driven by risk considerations, avoiding too little or too much of each activity and avoiding overkill or belated risk resolution. Stakeholder life cycle commitments were managed through the establishment of realistic milestones, avoiding analysis paralysis, unrealistic expectation, requirements creep, architectural drift, Commercial Off-the-Shelf shortfalls or incompatibilities, unsustainable architectures, traumatic cutovers, and useless systems. Emphasis was placed on system and life cycle activities and artifacts rather than initial development activities and artifacts, thus avoiding premature suboptimization on hardware, software, or development considerations.

Students of spiral development can find a wealth of information on exactly how the Hornet and Super Hornet blazed the spiral trail by referring to three comprehensive books on these aircraft: Orr Kelly, *HORNET: The Inside Story of the F/A-18*, Presidio Press, 1990; Dennis Jenkins, *F/A-18 Hornet: A Navy Success Story*, McGraw Hill, 2000; and Brad Elward, *THE BOEING F/A-18 HORNET and SUPER HORNET*, Specialty Press, 2000.

Editor's Note: The author welcomes questions or comments on this article. Contact Jackie Johnson at JohnsonJK@navair.navy.mil.

DMSMS 2003

Diminishing Manufacturing Sources and Material Shortages Conference 2003

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The theme of Diminishing Manufacturing Sources and Material Shortages (DMSMS) 2003 Conference is "DMSMS Excellence: Essential in Peace...Indispensable in War." DMSMS impacts every Air Force, Army, and Navy weapon system. The objective of this year's conference is to focus on the need for proactive DMSMS management to support the warfighter. As the military seeks a quicker, more lethal warfighting capability, we must also implement business practices that respond to non-availability issues rapidly and efficiently. This conference will present an opportunity to hear the

views of military leaders on what will be required to support the modern warfighter and a forum to discuss the best programmatic, technical, and logistics approaches. Additionally, breakout sessions covering Industrial Base issues and detailing the Electronic Parts Obsolescence Initiative (EPOI) have been added. For additional information, please contact James Neely, DMSMS 2003 Chairman, at (937) 904-4317 or email: james.neely@wpafb.af.mil. Or, if you have questions about the conference in general, contact Tracy Tapia at (937) 426-2808 ext. 244, email: ttapia@utcd Dayton.com, or visit the DMSMS Web site at <http://www.dmsms2003.utcd Dayton.com>.

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PEO EIS Industry Day 2003

Developing a Shared Understanding to Support the Warfighter

KELLY TAPP

The Armed Forces Communications and Electronics Association (AFCEA) Belvoir Chapter hosted the first Program Executive Office Enterprise Information Systems (PEO EIS) Industry Day on March 26, 2003, at the Fairview Park Marriott in Falls Church, Va. Industry Day was conceived by PEO EIS as a means to help develop a shared understanding between vendors from the private sector and PEO EIS Program Managers (PMs). As such, it provided a unique forum for PMs to meet with industry counterparts, share ideas and best practices, and develop innovative strategies best suited to meet the PEO EIS mission.

Supporting the Warfighter

PEO EIS is responsible for developing, acquiring, and deploying tactical and non-tactical information technology systems and communications to assure the Department of Defense and the U.S. Army of victory through information dominance. To that end, PEO EIS is dedicated to supporting the warfighter through infostructure and information management systems.

Participation in Industry Day exceeded initial projections and demonstrated readiness by both PMs and the private sector to form partnerships to help the warfighter. Fifty-five vendors from the private sector, 17 Project and Product Managers from PEO EIS, and teams from Army Knowledge On-Line and Navy-Marine Corps Internet exhibited at the conference. Over 400 participants attended the full conference and more

than 140 others registered to view the exhibit hall.

Welcome

Welcoming the participants to the first PEO EIS Industry Day was Kevin Carroll, Army Program Executive Officer for Enterprise Information Systems. Reviewing the origins of PEO EIS, he explained that PEO EIS is actually a recent consolidation of three other organizations: Program Executive Office, Standard Army Management Information Systems (PEO STAMIS); Communications Electronics Command (Army) Systems Management Center (CECOM SMC); and Acquisition, Logistics and Technology Enterprise Systems and Services (ALTESS).

PEO EIS, Carroll said, is a pivotal information technology enabler responsible for implementing its three Deputy Program Executive Offices: Business Information Systems, Army Enterprise, and Communications. A large number of EIS systems, he added, are supporting operations in Southwest Asia with on-the-ground government and contractor partner support teams.

BIS Project Manager Presentations

Following Carroll's remarks, Deputy Program Executive Officer for Business Information Systems (BIS) Gregory Kee introduced the BIS Project Managers. Focusing on the business tools needed to achieve total information dominance, the PMs discussed their products and programs, sharing information on how they are working to provide such tools.

Lt. Col. Joseph Klumpp, Product Manager, Army Human Resources System (AHRS)

Klumpp discussed how AHRS supports commanders with an automated personnel management system that serves the Army during peacetime, during mobilization, in war, and during demobilization.

Col. Stephen Broughall, Project Manager for Logistics Information Systems (LIS)

Broughall demonstrated how LIS products and programs direct, coordinate, report, and evaluate all functional, programmatic, and technical aspects of assigned standard Army logistics systems.

Lt. Col. Claude Hines, Product Manager for Medical Communications for Combat Casualty Care (MC4)

Hines explained MC4's role in developing and deploying to the Army an integrated family of medical communications and automated information systems to enhance Army and Joint combat casualty care, whether at peace or war. These systems, according to Hines, provide commanders with visibility of their medical situation as well as the status of their troops.

Gary Winkler, Project Manager for Transportation Information Systems (TIS)

Winkler described how TIS automates the processes of planning, organizing, coordinating, and controlling unit-related deployments, sustainment, day-to-day Installation Transportation Offi-

Tapp is a public affairs specialist in the Program Executive Office Enterprise Information Systems (PEO EIS), at Fort Belvoir, Va.

cer/Transportation Management Officer operations, redeployment, and retrograde operations in support of the Defense Transportation System.

MAJ. JOSEPH JEFFERSON, ASSISTANT PROJECT MANAGER FOR TACTICAL LOGISTICS DATA DIGITIZATION (TLDD)

Jefferson described the project as the collaboration of multiple information technology initiatives that will result in automating current supply and maintenance processes to reduce paper and clerical errors on the battlefield.

Keynote Speaker

Lt. Gen. Peter Cuvillo, Army Chief Information Officer/G6, addressed Industry Day attendees during a lunchtime presentation. Cuvillo's presentation focused on making the Army more knowledge-enabled and network-centric. Recent Army directives, he noted, call for a more wired backbone and significant server and application consolidations. Part of the struggle to consolidate servers, he said, is getting through the "if I don't own it, and I don't run it, it isn't [worth anything] mentality."

Cuvillo said that the Army has been able to track most of its vehicles and troops on the ground in Iraq through contributions of PEO EIS technologies. The new PEO EIS satellite-based Movement Tracking System (MTS), together with other satellite, Global Positioning System (GPS), and mapping systems technology significantly improved tracking of, and communications with, vehicles in the field—a concept known as Blue Force Tracking. Improved Blue Force Tracking, Cuvillo said, provides commanders with a continual, near-real-time picture of where military vehicles are at any given moment. The system provides communications technology in places where standard radios fail, giving warfighters the information when they need it.

Cuvillo also described how PEO EIS Automatic Identification Technologies (AIT) of Radio Frequency Identification Device (RFID) tags and In Transit Visibility (ITV) programs added to supply

Industry Day was conceived by PEO EIS as a means to help develop a shared understanding between vendors from the private sector and PEO EIS Program Managers.

and inventory management. These technologies, he explained, eliminate the need to have soldiers in the field open shipping containers to determine their contents and routing.

The Army's technologies, Cuvillo noted, have been holding up well during the war in Iraq. "If this isn't an operational test, then there isn't one that can be done in any of the test sites we have around the nation," he said. "Things are working."

Army Enterprise Project Manager Presentations

Col. Wellsford "Wells" Barlow, Deputy Program Executive Officer for Army Enterprise (AE), introduced Project Managers under AE working on innovative projects.

LT. COL. CHUCK HOPPE, PRODUCT MANAGER FOR ACQUISITION, LOGISTICS AND TECHNOLOGY ENTERPRISE SYSTEMS AND SERVICES (ALTESS)

Hoppe described the information management policy, guidance, support, and

services ALTESS provides in the development and acquisition of weapons and materiel. ALTESS, he added, also provides specialized information management support and services to other Department of Defense and Army elements, as well as the Acquisition Community in support of the Army Acquisition Executive's mission.

COL. SHARON HOLMES, PROJECT MANAGER FOR DISTRIBUTED LEARNING SYSTEM (DLS)

Holmes summarized how DLS is dedicated to providing a quality distance learning system to all Army components in the most expeditious and cost-effective manner possible.

COL. THOMAS HOGAN, PROJECT MANAGER FOR ENTERPRISE INFOSTRUCTURE (EI)

Hogan discussed how EI establishes an operational architecture and infostructure for the enterprise by optimizing the dynamic integration of key product offices responsible for the management and implementation of processes and systems critical to the goals of Army Knowledge Management.

DAVID CUIMMO, PROJECT MANAGER FOR INFORMATION MANAGEMENT & TELECOMMUNICATIONS AND PENTAGON RENOVATION (IM&T-PR)

Cuimmo talked about the effort to provide intensive centralized product management of the modernization and replacement of IM&T services and capabilities during the renovation of the Pentagon.

OLGA LAWRENCE, ASSISTANT PROJECT MANAGER FOR THE ARMY SMALL COMPUTER PROGRAM

Lawrence reviewed the goal to provide information technology excellence through innovative products and support services that meet the automation needs of its customers, while ensuring standardization, interoperability, and state-of-the-art technology.

Communications Project Manager Presentations

Joanne Powell, Deputy Program Executive Officer for Communications, fo-

U.S. ARMY PROGRAM EXECUTIVE OFFICE

ENTERPRISE INFORMATION SYSTEMS (PEO EIS)

INDUSTRY DAY 2003

Army Maj. C.J. Wallington, Army Knowledge On-Line (AKO); Army Lt. Gen. Peter Cuvillo, Army Chief Information Officer/G6; Andahazy; and Carroll discuss the road map whereby AKO will be the collaboration portal to which Army activities migrate information for the network-centric Army of the future. Cuvillo delivered the PEO EIS Industry Day 2003 keynote address.



Claude M. Bolton, Assistant Secretary of the Army for Acquisition, Logistics and Technology, delivers the Feature Address at the inaugural PEO EIS Industry Day 2003.



Kevin Carroll, Program Executive Officer Enterprise Information Systems; Shelia Andahazy, President AFCEA Belvoir Chapter; and Bolton agree that planning should begin now for PEO EIS Industry Day 2004. Carroll delivered the welcome address for the day's events and Andahazy the concluding remarks.





William Smith, Project Manager of Defense Communications and Army Switched Systems (DCASS), describes the overall project management of global Defense Communications Systems (DCS).



Army Col. Sharon Holmes, Project Manager for Distributed Learning System (DLS), summarizes how DLS is dedicated to providing a quality distance learning system to all Army components.



David Ciummo, Project Manager for Information Management & Telecommunications-Pentagon Renovation talks about intensive centralized product management during the renovation of the Pentagon.



Army Col. N. Lee Price, Project Manager for the Defense Communications and Army Transmission Systems (DCATS) discusses the achievements of DCATS in supporting the Joint Warfighters, Major Commands, and Combatant Commanders.



Gary Winkler, Project Manager for Transportation Information Systems (TIS), describes how TIS automates the processes of planning, organizing, coordinating, and controlling unit-related deployments in support of the Defense Transportation System.



Army Col. Stephen Broughall, Project Manager for Logistics Information Systems (LIS) demonstrates how LIS products and programs direct, coordinate, report, and evaluate all functional, programmatic, and technical aspects of assigned standard Army logistics systems.

U.S. ARMY PROGRAM EXECUTIVE OFFICE

ENTERPRISE INFORMATION SYSTEMS (PEO EIS)

INDUSTRY DAY 2003

Shelia Andahazy (seated), President AFCEA Belvoir Chapter, explores the wireless technology of Combat Service Support Automated System Interface (CAISI)—the last mile solution. CAISI provided connectivity for PMs at PEO EIS Industry Day 2003. Observers standing from left are Joanne Powell, Deputy PEO Communications; Kevin Carroll, PEO EIS; Army Maj. Salvatore Fiorella; and Linda Valenzano, PM DCATS.



Joanne Powell, Deputy Program Executive Officer for Communications, introduces Communications Program Managers.



Gregory Kee, Deputy Program Executive Officer Army Information Systems, introduces the Business Information Systems (BIS) Project Managers.





Army Lt. Col. Joseph Klumpp, Product Manager, Army Human Resources System (AHRS), discusses how AHRS supports commanders.



Army Lt. Col. Claude Hines, Product Manager for Medical Communications for Combat Casualty Care (MC4) explains MC4's role in developing and deploying medical automated information systems.



Army Lt. Col. William "Chuck" Hoppe, Product Manager for Acquisition, Logistics and Technology Enterprise Systems and Services (ALTESS) describes services ALTESS provides in the development and acquisition of weapons and materiel.



Army Col. Thomas Hogan, Project Manager for Enterprise Infrastructure (EI), discusses how EI establishes an operational architecture and infrastructure.

cused on innovative communications systems, and subsequently introduced the Communications Project Managers.

WILLIAM SMITH, PROJECT MANAGER OF DEFENSE COMMUNICATIONS AND ARMY SWITCHED SYSTEMS (DCASS)
Smith described the overall project management of global Defense Communications Systems (DCS), Army non-tactical secure/nonsecure command and control (C2) base information voice systems, data switching systems, and associated networks.

COL. N. LEE PRICE, PROJECT MANAGER FOR THE DEFENSE COMMUNICATIONS AND ARMY TRANSMISSION SYSTEMS (DCATS)

PEO EIS implements its three Deputy Program Executive Offices: Business Information Systems, Army Enterprise, and Communications.

Price discussed the achievements of DCATS in supporting the Joint Warfighters, Major Commands, and Combatant Commanders with dedicated worldwide strategic satellite ground components, long haul terrestrial microwave communication systems, tech control facilities, command center upgrades, base radios, combat vehicle intercom systems, and deployed forces infrastructure.

Feature Address

Claude M. Bolton, Assistant Secretary of the Army for Acquisition, Logistics, and Technology, delivered the Industry Day Feature Address. He began by discussing his current role as the Army Acquisition Executive, focusing on his career in in the U.S. Air Force and many

years of experience in weapons systems acquisition.

Surprising his audience with a pop quiz, Bolton asked those attending to identify who wrote the first compiler and who was the first recognized computer programmer (Answer—Navy Adm. Grace Hopper and Augusta Ada Byron, respectively).

From this review of the roots of technology development, Bolton went on to discuss the evolution of Army transformation through the development of the Future Combat Systems (FCS). FCS, he said, is leading the Army to a Network Concentric Unit of Action where the soldier and the network are connected to assure the Army of information dominance. An enthusiastic “Hoo-AH” from the audience greeted Bolton’s announcement of the Army’s goal of victory through information dominance.

Using a dynamic slide presentation, Bolton demonstrated the concept of soldier-Web connectivity by forcing 200 legacy standalone systems through a funnel to form a select group of Web-enabled, joint systems. There is a great need within the Army, he said, to reduce unique legacy functional systems and migrate to Web-enabled, joint systems.

A Worthy Cause

Sheila Andahazy, President of the AFCEA Belvoir Chapter, concluded Industry Day 2003 by thanking attendees for their participation. Andahazy noted that \$10,000 raised from Industry Day will support the AFCEA Belvoir Chapter’s annual scholarship fund for promoting science and technology at the local area secondary and middle schools, in addition to helping graduating seniors as they pursue a science and technology curriculum in college.

Editor’s Note: For more information on PEO EIS Industry Day 2003, including copies of the presentations and event photographs, visit the PEO EIS Web site at <http://www.eis.army.mil>. For information on the AFCEA Belvoir Chapter, visit the Chapter’s Web site at <http://www.horizons.com/afceabelvoir>.

Aldridge Retires, Wynne Named Acting USD(AT&L)

After two years as Under Secretary of Defense for Acquisition, Technology and Logistics (AT&L), Edward C. “Pete” Aldridge Jr., officially retired from government on May 27, 2003. Principal Deputy Under Secretary (AT&L) Michael W. Wynne became the Acting USD(AT&L).

Aldridge was sworn in as Under Secretary on May 11, 2001. His career included 18 years of service in the Pentagon as an operations research analyst; as the Director of Planning and Evaluation under current Secretary of Defense Donald Rumsfeld during Rumsfeld’s first tour as Secretary of Defense; and as Under Secretary and then Secretary of the Air Force under President Reagan.

In the 1980s Aldridge was an astronaut-in-training in preparation for his participation as a payload specialist on the first planned mission from Vandenberg Air Force Base in California.

During his tenure, Aldridge focused on a theme of “Acquisition and Logistics Excellence” and set five goals for the AT&L workforce. In his resignation letter, Aldridge noted “significant progress

on accomplishing these five goals and setting in place the acquisition, technology and logistics support activities” necessary for defense transformation.

Michael W. Wynne was sworn in as the Deputy Under Secretary of Defense (AT&L) on July 17, 2001. He also served as the Principal Deputy to the Under Secretary of Defense for Acquisition, Technology & Logistics.

Wynne spent 23 years with General Dynamics in various senior positions with aircraft (F-16), main battle tanks (M1A2), and space launch vehicles (Atlas and Centaur). He also spent three years with Lockheed Martin, having sold the Space Systems Division to [then] Martin Marietta. He successfully integrated the division into the Astronautics Company and became the general manager of the Space Launch Systems segment, combining the Titan with the Atlas Launch vehicles.

Prior to joining industry, Wynne served in the Air Force for seven years, leaving active duty as a captain and assistant professor of astronautics at the U.S. Air Force Academy in Colorado, teaching control theory and fire control techniques.



E.C. “Pete” Aldridge Jr.
Former Under Secretary of Defense
(Acquisition, Technology & Logistics)



Michael Wynne
Acting Under Secretary of Defense
(Acquisition, Technology & Logistics)

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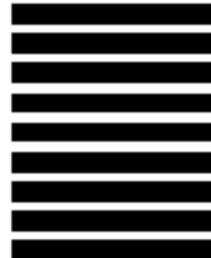
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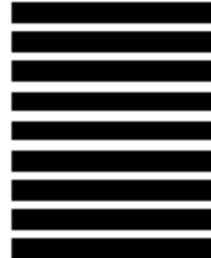
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DEPARTMENT OF DEFENSE NEWS
(RELEASED APRIL 12, 2003)

DOD RELEASES SELECTED ACQUISITION REPORTS FOR DECEMBER 2002 PERIOD

The Department of Defense has released details on major defense acquisition program cost and schedule changes since the September 2002 reporting period. This information is based on the Selected Acquisition Reports (SARs) submitted to the Congress for the Dec. 31, 2002, reporting period.

SARs summarize the latest estimates of cost, schedule, and technical status. These reports are prepared annually in conjunction with the president's budget. Subsequent quarterly exception reports are required only for those programs experiencing unit cost increases of at least 15 percent or schedule delays of at least six months. Quarterly SARs are also submitted for initial reports, final reports, and for programs that are rebaselined at major milestone decisions.

The total program cost estimates provided in the SARs include research and development, procurement, military construction, and acquisition-related operations and maintenance (except for pre-Milestone B programs, which are limited to development costs pursuant to 10 USC §2432). Total program costs reflect actual costs to date as well as future anticipated costs. All estimates include anticipated inflation allowances.

The current estimate of program acquisition costs for programs covered by SARs for the prior reporting period (September 2002) was \$1,112,183.1 million. After adding the costs for two new programs (Joint Tactical Radio System [JTRS] Cluster 1 and JTRS Waveform) in September 2002, and subtracting the launcher portion of GMLRS [Guided Multiple Launch Rocket System], the adjusted current estimate of program acquisition costs was \$1,130,503.1 million.

For the December 2002 reporting period, there was a net cost decrease of \$834.7 million or -0.1 percent for those programs that have reported previously, excluding costs for the aforementioned programs submitting initial SARs. For this submission, the initial SAR programs are Excalibur (Family of Precision 155mm Projectiles), GCSS (Global Combat Support System) Army, HIMARS (High Mobility Artillery Rocket System), Land Warrior and SSGN (Trident Conversion).

The net cost decrease of \$834.7 million was due primarily to a net reduction in the planned quantities to be purchased (-\$48.8 billion) and the application of lower escalation indices (-\$13.5 billion). These decreases were partially offset by additional engineering changes (hardware/software)

	Current Estimate (\$ in Millions)
September 2002 (70 programs)	\$1,112,183.1
Plus two new programs (JTRS Cluster 1 and JTRS Waveform)	+20,027.3
Less final report on the completed launcher portion of GMLRS (formerly MLRS Upgrade)	-1,707.3
September 2002 Adjusted (72 programs)	\$1,130,503.1
Changes Since Last Report:	
Economic	\$ -13,488.9
Quantity	-48,835.5
Schedule	+7,384.1
Engineering	+30,662.0
Estimating	+23,163.0
Other	+13.2
Support	+267.4
Net Cost Change	\$-834.7
December 2002 (72 programs)	\$1,129,688.4

(+\$30.7 billion), higher program estimates (+\$23.2 billion), and a net stretchout of the development and procurement schedules (+\$7.4 billion). Further details of the most significant changes are summarized below by program:

New SARs (As of Dec. 31, 2002)

The Department of Defense has submitted initial SARs for Excalibur (Family of Precision 155mm Projectiles), GCSS (Global Combat Support System) Army, HIMARS (High Mobility Artillery Rocket System), Land Warrior and SSGN (Trident Conversion). These reports do not represent cost growth. Baselines established on these programs will be the point from which future changes will be measured. The current cost estimates are provided below:

Program	Current Estimate (\$ in Millions)
Excalibur (Family of Precision 155mm Projectiles)	\$4,798.7
GCSS (Global Combat Support System) Army	1,689.4
HIMARS (High Mobility Artillery Rocket System)	4,312.9
Land Warrior	2,844.4
SSGN (Trident Conversion)	3,898.5
	Total \$ 17,543.9

Summary Explanations of Significant SAR Cost Changes (As of Dec. 31, 2002)

Army

Abrams Upgrade (M1A2)—Program costs decreased by \$1,660.1 million (-18.3%) from \$9,096.1 million to \$7,436.0 million, due primarily to a reduction in the Service Extension Program (SEP) retrofit quantity of 378 SEPs (from 419 to 41 SEPs) and associated reductions in initial spares, peculiar support, and other weapon systems costs related to the decrease in SEP retrofit quantity.

ATACMS-BAT (Army Tactical Missile System-Brilliant Antitank)—Program costs decreased \$4,085.1 million (-62.7%) from \$6,515.3 million to \$2,430.2 million because the program was terminated.

ATIRCM/CMWS (Advanced Threat Infrared Countermeasure/Common Missile Warning System)—Program costs increased \$1,052.1 million (+36.9%) from \$2,851.4 million to \$3,903.5 million, due primarily to a quantity increase of 1,626 systems from 1,078 to 2,704 systems (+\$386.8 million) and additional trainers and contractor logistics support (+\$242.9 million). There were also increases for restoration of funding for Tier 2/3 threats, miniaturization, all band laser capabilities, and incorporation of multi-band fiber optic (+\$99.1 million), and an increased cost estimate for ATIRCM hardware (+\$53.8 million).

Black Hawk Upgrade (UH-60M)—Program costs increased \$1,154.3 million (+8.8%) from \$13,183.5 million to \$14,337.8 million, due primarily to a reduced procurement rate that stretched the program from FY22 to FY26 (+\$593.4 million). There were also increases to incorporate Multi-Functional Displays (MFDs) (+\$438.1 million), added capabilities for Dual Digital Flight Controls (+\$330.9 million), and the 701D engine (+\$98.9 million). These increases were partially offset by the application of revised escalation rates (-\$385.3 million).

Bradley Upgrade—Program costs decreased by \$1,463.0 million (-34.5%) from \$4,245.8 million to \$2,782.8 million, due primarily to a 442 vehicle reduction in the quantity of upgrades from 1,037 to 595 vehicles and associated reductions in contractor engineering, initial spares, peculiar support, training devices, and contractor logistics support related to the decreased quantity.

Comanche—Program costs decreased \$9,581.9 million (-20.0%) from \$47,905.6 million to \$38,323.7 million, due primarily to a quantity decrease of 563 aircraft from 1213 to 650 aircraft (-\$12,688.6 million). These decreases were partially offset by increases related to a stretchout of the an-

nual procurement buy profile (+\$615.8 million), a program restructure that shifted to a Blocking Strategy (+\$550.6 million), and cost growth prior to the restructure (+\$632.7 million). There were further increases related to aircraft weight growth (+\$498.5 million), higher contractor overhead rates (+\$289.8 million), increased software integration and testing (+\$273.6 million), and additional flight testing (+\$267.3M).

FMTV (Family of Medium Tactical Vehicles)—Program costs increased \$1,195.7 million (+6.6%) from \$18,074.4 million to \$19,270.1 million, due primarily to the addition of Embedded Diagnostic Hardware (+\$757.0 million), a change in the procurement buy profile in response to budgetary constraints (+\$555.1 million), and an upward revision in hardware/engineering change estimates to reflect actual costs extrapolated over the program life (+\$356.5 million). These increases were partially offset by the application of revised escalation rates (-\$463.5 million).

GMLRS (Guided Multiple Launch Rocket System)—Program costs increased \$1,140.7 million (+10.7%) from \$10,691.2 million to \$11,831.9 million, due primarily to the addition of unique hardware for a Unitary Warhead (+\$877.6 million) and higher estimates to accelerate the program (+\$558.8 million). These increases were partially offset by the application of revised escalation indices (-\$340.4 million).

MCS (Maneuver Control System)—Program costs increased by \$296.5 million (+28.5%) from \$1,039.3 million to \$1,335.8 million, due primarily to a requirements change reflecting the purchase of Standard Integrated Command Post Shelters (SICPS) (previously funded outside the program) and the retrofit of previously purchased hardware to support the change from Version 6.X to Version 7.X software (+\$411.0 million). These increases were partially offset by a quantity decrease of 1,095 re-procurement systems from 9,724 to 8,629 systems (-\$67.8 million) and associated reductions in other weapon systems costs related to the decrease in re-procurement systems (-\$51.7 million).

SMART-T (Secure Mobile Anti-Jam Reliable Tactical Terminal)—Program costs increased \$196.5 million (+25.4%) from \$774.5 million to \$971.0 million, due primarily to the acquisition of Advanced Extremely High Frequency (AEHF) modification kits.

Navy

AAAV (Advanced Amphibious Assault Vehicle)—Program costs increased by \$982.5 million (+10.2%) from \$9,640.3 million to \$10,622.8 million, due primarily to higher estimates for the suspension, engine, and drive train (+\$573.2

million), impacts of the one-year program restructure on the System Development and Demonstration contract (+\$324.6 million), a stretchout of the procurement buy profile for the program restructure (+\$158.1 million), and the addition of survivability materials to the vehicle (+\$116.1 million). These increases were partially offset by the application of revised escalation indices (-\$261.9 million).

DDG 51 Destroyer—Program costs decreased \$3,224.0 million (-4.9%) from \$66,026.7 million to \$62,802.7 million, due primarily to the quantity decrease of 2 ships from 64 to 62 ships (-\$1,890.8 million) and an associated estimating allocation* (-\$672.4 million). There were additional decreases for the application of revised escalation indices (-\$544.9 million) and for cost savings associated with the FY02-05 Multi-Year Procurement contract award (-\$330.0 million).

E-2C Reproduction—Program costs increased \$423.2 million (+10.8%) from \$3,912.5 million to \$4,335.7 million, due primarily to an increase of 3 aircraft from 41 to 44 aircraft (+\$218.6 million) and associated schedule, engineering, and estimating allocations* (+\$31.8 million). There were also additional increases related to the new aircraft for contractor and government furnished equipment (+\$74.3 million), technical publications and production support (+\$47.4 million), and initial spares (+\$38.4 million).

FA-18E/F—Program costs increased \$1,959.1 million (+4.0%) from \$48,791.1 million to \$50,750.2 million, due primarily to additional engineering design for the new EA-18G model (+\$1,055.1 million). Additionally, the total quantity increased 4 aircraft from 548 to 552 aircraft (+\$198.6 million), along with associated schedule and estimating allocations* (+\$41.8 million). Of the previous quantity of 548 F/A-18E/F aircraft, 86 will now be produced as EA-18G aircraft; additionally, the aforementioned increase of 4 will be produced as EA-18G's for a total of 90 EA-18G aircraft, leaving a total of 462 F/A-18E/F aircraft. Finally, there were increases in initial spares and peculiar support costs related to the addition of EA-18G (+\$1,016.9 million).

JSOW (Joint Stand Off Weapon)—Program costs decreased by \$2,114.3 million (-29.9%) from \$7,073.2 million to \$4,958.9 million, due primarily to a quantity decrease of 4,303 BLU-108 weapons (from 16,114 to 11,811 weapons) associated with deferral of Navy and Air Force BLU-108 programs (-\$1,193.7 million). There was also a significant decrease in the estimate for contractor manufacturing and support based on actual cost from the full rate production contract (-\$938.5 million).

MH-60S (Fleet Combat Support Helicopter)—Program costs increased \$644.7 million (+12.0%) from \$5,387.5 million to \$6,032.2 million, due primarily to additional requirements related to Link 16 and the Airborne Mine Countermeasure upgrades (+\$440.7 million). Also, peculiar support for trainers increased by \$161.7 million.

SSN 774 (Virginia Class Submarine)—Program costs increased \$8,352.1 (+11.4%) million from \$73,440.1 million to \$81,792.2 million, due primarily to program re-pricing for additional Special Hull Treatment funding and increased construction costs based on actual returns from the first four submarines (+\$3,569.5 million). There were additional increases attributed to higher industry inflation rates for labor (+\$3,407.9 million) and material (+\$720.1 million), increased estimates for Government Funded Equipment (GFE) (+\$1,261.5 million), increases in estimates for change orders (+\$954.8 million), and a stretchout of the annual procurement buy profile from FY15 to FY17 (+\$815.0 million). These increases were partially offset by the application of revised escalation indices (-\$1,181.3 million) and multi-year procurement savings for FY14-17 at \$150 million per sub (-\$1,200 million).

T45TS (Naval Undergraduate Jet Flight Training System)—Program costs increased \$739.3 million (+13.3%) from \$5,569.6 million to \$6,308.9 million, due primarily to an increase of 28 aircraft from 183 to 211 aircraft (+\$554.0 million), increases to initial spares (+\$25.5 million), and other logistics-related elements to support the additional aircraft (+\$111.8 million). There was also a delayed budget adjustment associated with contractor claim adjustments (+\$41.6 million).

Tactical Tomahawk—Program costs increased by \$789.0M (+36.4%) from \$2,169.9 million to \$2,958.9 million, due primarily to a quantity increase of 671 missiles from 1,725 to 2,396 missiles (+\$450.4 million) and associated schedule and estimating allocations* (-\$51.8 million). There were additional increases related to a stretchout of the procurement profile (+\$233.7 million) and revised missile hardware estimates (+\$122.0 million).

V-22—Program costs increased by \$2,021.9 million (+4.4%) from \$46,240.8 million to \$48,262.7 million, due primarily to a change in scope of the return to flight Blocking requirements (+\$756.0 million), a change in material and labor rate estimates (+\$1,205.1 million), and a revised estimate of recurring flyaway items (i.e., GFE electronics, engineering change orders, and ancillary equipment) (+\$257.9 million).

Air Force

AEHF (Advanced Extremely High Frequency) Satellite—Program costs decreased \$644.4 million (-11.6%) from \$5,561.3 million to \$4,916.9 million, due primarily to eliminating procurement for two satellites, satellites #4 and #5, from the program (-\$969.3 million). This quantity decrease was partially offset by cost increases associated with a six-month slip of the first satellite launch from June 2006 to December 2006 (+\$280.7 million).

B-1B CMUP (Conventional Mission Upgrade Program)—Program costs decreased \$546.3 million (-34.5%) from \$1,581.3 million to \$1,035.0 million, due primarily to termination of the Defensive System Upgrade Program (DSUP) portion of the program (overall program quantities decreased by 60 aircraft kits from 120 aircraft kits for both Computer Upgrade and DSUP to 60 aircraft kits for Computer Upgrade only).

C-17A—Program costs increased \$1,343.1 million (+2.3%) from \$58,998.3 million to \$60,341.4 million, due primarily to additional funding for FY08-09 flexible sustainment (+\$1,526.7 million) and for FY08-09 systems engineering project management, contractor furnished equipment and mission support (+\$225.7 million). These increases were partially offset by the application of revised escalation rates (-\$703.9 million).

EELV (Evolved Expendable Launch Vehicle)—Program costs increased \$1,370.0 million (+7.2%) from \$18,914.5 million to \$20,284.5 million, due primarily to assure access to space by funding two viable launch service providers (+\$539.0 million), and launch services adjustments to include mission assurance (+\$527.5 million) and commercial market price variations (+\$287.2 million). There were additional increases for payload weight growth (+\$275.0 million) and a stretchout of the annual procurement buy profile (+\$132.3 million). These increases were partially offset by the application of revised escalation rates (-\$411.0 million).

F/A-22—Program costs increased \$2,063.9 million (+3.0%) from \$69,721.4 million to \$71,785.3 million, due primarily to updated cost estimates for engine (+\$734.3 million) and airframe (+\$3,006.8 million) recurring costs, additional risk (+\$1,263.0 million), and reduced production cost savings (+\$572.2 million). There were additional increases for increased Engineering and Manufacturing Development (EMD) cost (+\$876.0 million), a stretchout of the annual procurement buy profile (+\$415.5 million), additional funding for system modernization (+\$1,958.2 million), and the application of revised escalation rates (+\$359.5 million). These increases were partially offset by a quantity reduction of 63 aircraft from 341 to 278 aircraft (-\$6,869.4 million)

and associated weapon system support costs (-\$443.6 million).

GBS (Global Broadcast Service)—Program costs increased \$94.0 million (+14.6%) from \$645.7 million to \$739.7 million, due primarily to a net increase of 303 receive suites from 748 to 1,051 receive suites (+\$98.7 million) and associated schedule and estimating allocations* (+\$14.2 million). In addition, there were increases to facilitate Internet Protocol development (+\$15.8 million) and Defense Emergency Response Funds (DERF) to facilitate two-person lift development (+\$7.0 million). These increases were partially offset by a decrease in the estimated cost of Army receive suites (-\$41.5 million).

Global Hawk—Program costs decreased by \$1,031.7 million (-15.1%) from \$6,846.6 million to \$5,814.9 million, due primarily to a directed reduction in program requirements and capabilities (-\$478.9 million), a downward revision in program cost estimates to reflect actuals, contract negotiations, and overhead rate changes (-\$402.4 million), and the application of revised escalation rates (-\$159.6 million).

JASSM (Joint Air-to-Surface Standoff Missile)—Program costs increased \$887.6 million (+28.1%) from \$3,163.2 million to \$4,050.8 million, due primarily to a quantity increase of 6 developmental test/operational test missiles for JASSM-Extended Range (ER) (+\$6.8 million) and 640 procurement missiles (from 3700 to 4340 missiles) (+\$433.0 million). There were also increases for JASSM-ER development and additional capability engine/fuel costs (+\$438.6 million).

JDAM (Joint Direct Attack Munition)—Program costs increased \$1,890.0 million (+48.9%) from \$3,865.4 million to \$5,755.4 million, due primarily to quantity increases of 30,874 from 43,292 to 74,166 tail kits to the Navy and 59,332 from 92,679 to 152,011 tail kits to the Air Force in support of Operation Enduring Freedom.

NAS (National Airspace System)—Program costs increased \$344.6 million (+31.0%) from \$1,112.7 million to \$1,457.3 million, due primarily to a quantity increase of 2 systems from 90 to 92 systems (+\$13.3 million), technology refresh (+\$58.4 million), and additional airfield automation (+\$41.9 million). There were also cost increases due to additional requirements, site installation/site adaptation and program extension (+\$229.2 million).

Navstar GPS (Global Positioning System)—Program costs increased \$920.1 million (+15.5%) from \$5,937.2 million to \$6,857.3 million, due primarily to a quantity increase of 4 satellites from 33 to 37 satellites (+\$288.4 million), the addition of space modification costs not previously reported

in the SAR (+\$149.6 million), and additional requirements for Flexible Power (+\$301.0 million). The costs for the User Equipment segment of the program increased to support additional Military code (M-code) requirements (+\$150.8 million).

WGS (Wideband Gapfiller Satellites)—Program costs increased \$667.2 million (+76.1%) from \$876.9 million to \$1,544.1 million, due primarily to a quantity increase of 2 satellites from 3 to 5 satellites (+\$634.3 million), a radio frequency (RF) modification associated with satellites #4 and #5 to support Airborne Intelligence Surveillance and Reconnaissance (+\$63.2 million), and restoral of launch and flight support services for satellites #1-3 in FY 2004-2007 (+\$18.6 million). These increases were partially offset by a decrease associated with contract savings through the use of existing hardware, which resulted in a revised estimate for Primary Injection Points for Gapfiller broadcast service (-\$19.9 million).

DoD

BMDS (Ballistic Missile Defense System)—Program costs increased \$15,679.4 million to \$62,896.5 million, due primarily to the engineering changes associated with adding Blocks 2008 and 2010 BMD capability and associated Mission Area Investment costs (+\$17,997.4 million), and an increase to achieve Block 2004 Initial Defensive Capability (+\$1,451.5 million). These increases were partially offset by engineering changes associated with the net realignment of Patriot Advanced Capability (PAC-3) and Medium Extended Air Defense System (MEADS) development funds to the Army (-\$2,026.2 million), various DoD and Congressional reductions (-\$554.2 million), and economic and estimating changes for inflation rate adjustments (-\$1,194.1 million).

JSF (Joint Strike Fighter)—Program costs decreased by \$26,721.9 million (-11.8%) from \$226,458.3 million to \$199,736.4 million, due primarily to a decrease of 409 Navy aircraft (from 2,866 to 2,457 aircraft) (-\$25,434.9 million), associated decreases in initial spares and support requirements (-\$3,956.3 million), as well as the application of revised escalation rates (-\$3,404.4 million). These decreases were partially offset by increases in outyear costs due to production affects from lower aircraft quantities (+\$2,623.7 million), the addition of International Commonality Effort (+\$1,270.0 million), refined engine program to optimize interchangeability (+\$1,157.8 million), and revised estimating methodology from parametric to bottom-up (+\$451.4 million).

JSIMS (Joint Simulation System)—Program costs decreased \$362.1 million (-28.0%) from \$1,293.3 million to \$931.2 million, due primarily to the elimination of outyear funds (-\$411.8 million), revision of funding expenditures (-\$19.4 million), and Congressional reductions (-\$12.6 million). These decreases were partially offset by increases for the provision of funding to the Joint Warfighting Center to establish a Software Support Facility (+\$75.6 million).

* Quantity changes are estimated based on the original SAR baseline cost-quantity relationship. Cost changes since the original baseline are separately categorized as schedule, engineering, or estimating “allocations.” The total impact of a quantity change is the identified “quantity” change plus all associated “allocations.”

Editor’s Note: This information is in the public domain at <http://www.defenselink.mil/news>.

U.S. ARMY NEWS SERVICE
(RELEASED MARCH 28, 2003)

FUTURE COMBAT SYSTEMS (FCS) COMPLETES CAPSTONE DEMONSTRATION

Calling it the ‘graduation event’ in a series of demonstrations held during the course of the current phase of the Future Combat Systems program, the Army, the Defense Advanced Research Projects Agency (DARPA), and the Lead Systems Integrator (LSI) announced today the successful completion of the program’s Capstone Demonstration.

The Capstone Demonstration, which was conducted this week at Fort Knox, Ky., and Fort Belvoir, Va., is a culmination and wrap-up of seven previous demonstrations held during the FCS Concept and Technology Development (CTD) phase. The demonstration was intended, in part, to illustrate the FCS program concepts and to demonstrate the program’s

readiness for transition to the System Development and Demonstration (SDD) phase.

“The demonstrations have been instrumental in eliminating uncertainty and reducing risk; they have given us valuable insights into the enhanced capabilities of an FCS-equipped force,” said Col. William Johnson, Program Manager, Objective Force. “It’s been a tough and demanding year, but the Army/DARPA/LSI team should be proud of their tremendous accomplishments.”

“I was especially pleased with the feedback from the soldiers at Ft. Knox taking part in the simulations,” Jerry McElwee, Vice President and FCS LSI Program Manager, said. “They provided many frank and positive comments on the simulated FCS capabilities added to their ability to accomplish assigned missions. More importantly, they helped us identify those capabilities and areas that require more attention.”

The Capstone Demonstration consisted of a series of multimedia presentations, interwoven with a warfighting simulation of a Unit of Action that showed the overall capabilities of the FCS System of Systems—how it is organized, the technologies behind it, how it is deployed, and how it is sustained. The simulation portion of the demonstration was executed at the Unit of Action Mounted Battle Laboratory at Fort Knox, Ky., with a live video feed to the portal at Fort Belvoir.

FCS, the Army's transformation program, is a networked "family of systems" that uses advanced communications and technologies to link the soldier with manned and unmanned air and ground platforms and sensors. This highly agile and lethal force will provide the tactical formations required to fulfill the Army's vision for an Objective Force.

The LSI, working in partnership with the Army and DARPA, has total systems performance responsibility for the

FCS program. The LSI manages the identification, selection, and procurement of major systems and subsystems. The LSI also works with the Army to develop the operational, systems, and technical architectures, which provide links to the Objective Force as well as Joint, Interagency, and Multinational organizations.

DARPA currently manages the FCS CTD phase of the program. Following entry into the SDD phase, the U.S. Army Program Executive Officer for Ground Combat Systems will take responsibility for systems integration, production, fielding, and sustainment. The FCS first unit equipped will be fielded in 2008, and the initial operational capability for the first FCS-equipped Unit of Action will be in 2010.

Editor's Note: This information is in the public domain at <http://www.dtic.mil/armylink/news>.

DEPARTMENT OF DEFENSE NEWS (RELEASED APRIL 4, 2003)

EIGHTH ROUND OF BUSINESS INITIATIVES APPROVED

The Department of Defense announced today the DoD Business Initiative Council (BIC) has approved additional initiatives intended to improve business practices within the Department and enhance support to the warfighter. A total of fifty-eight initiatives have now been approved for implementation over the past 20 months.

The five initiatives approved in this round were: eliminating the need for individual ready reserve recruits to replicate their primary skill training; streamlining the military passport application process; accelerating congressional notification for validated combat needs; proposing changes to thresholds for congressional notifications of newly initiated projects; and re-engineering of depot maintenance reporting.

The BIC was launched in July 2001 to implement bureaucracy-reducing and money-saving opportunities in the business practices of the Department of Defense. This is core to Secretary Rumsfeld's broader "Battle on Bureaucracy" campaign, announced on Sept. 10, 2001. Events of the following day, and since, have not diminished the need to continue this "battle."

Along with other major improvement programs, BIC initiatives contribute to the overall objectives of more cost-effective use of DoD resources, better use of personnel, and more rapid achievement of DoD goals.

The council, established and presided over by Under Secretary of Defense for Acquisition, Technology and Logistics,

the Honorable Edward C. "Pete" Aldridge, is composed of the Military Department Secretaries, the Under Secretary of Defense (Comptroller), the Under Secretary of Defense for Personnel and Readiness, and the Vice Chairman of the Joint Chiefs of Staff. The BIC reports directly to the Senior Executive Council, whose members include the Secretary and Deputy Secretary of Defense; the Under Secretary of Defense for Acquisition, Technology and Logistics; and the Military Department Secretaries.

In approving this latest round of BIC initiatives, Aldridge stated: "The Department is seeing real results from the previously approved initiatives and the enhancements to business processes are having a direct impact. The Department has, for example, streamlined the process for disposing of information technology equipment, developed a means for the Services to share common flight clearance information, improved the processes for purchasing software and hardware on an enterprise basis, re-engineered the process for personnel security investigations, and obtained Congressional approval of a number of financial management authority changes."

Responsibility for administration of the BIC will now transfer to the Air Force from the Navy Department.

This responsibility is being shared among the Services on a six-month rotational basis to help assure commitment and participation. This arrangement is in keeping with the Secretary's ongoing pledge to improve Departmental coordination and collaboration.

Editor's Note: This information is in the public domain at <http://www.defenselink.mil/news>.

DEPARTMENT OF DEFENSE NEWS
(RELEASED APRIL 24, 2003)

DEFENSE PROGRAM IMPLEMENTATION PLAN APPROVED

Under Secretary of Defense for Acquisition, Technology and Logistics (AT&L) Pete Aldridge today approved a detailed plan to implement a new management structure for the Chemical and Biological Defense Program. Programmatic responsibilities for the Office of the Secretary of Defense, the Joint Staff, Army, Defense Threat Reduction Agency (DTRA), and a newly named Joint Program Executive Officer are included in the new plan.

The Chemical and Biological Defense Program provides the science and technology base, product development, and procurement for a range of items such as protective equipment, chemical and biological agent detectors, decontamination equipment, and medical countermeasures. The new plan streamlines management structures and strengthens accountability for different elements of the program. The plan also calls for the Assistant Secretary of the Army (AL&T)

Claude Bolton to report to Aldridge as the Defense Acquisition Executive for program implementation. The Joint Program Executive Officer will be Army Brig. Gen. Stephen V. Reeves, who will report to Bolton.

Office of the Secretary of Defense staff program oversight will be accomplished by the Assistant to the Secretary of Defense for Nuclear, Chemical and Biological Defense Programs Dale Klein, and Deputy Assistant to the Secretary of Defense for Chemical and Biological Defense Anna Johnson-Winegar. Requirements issues will be the responsibility of the Joint Staff's Joint Requirements Office for Chemical, Biological, Radiological and Nuclear Defense, led by Air Force Brig. Gen. Stephen M. Goldfein. DTRA will manage the science and technology portion of the program and will perform program financial management functions.

Editor's Note: This information is in the public domain at <http://www.defenselink.mil/news>.

AIR FORCE NEWS SERVICE
(RELEASED APRIL 14, 2003)

F/A-22 PROVIDES TECHNOLOGICAL LEAP FORWARD

Staff Sgt. A.J. Bosker, USAF

WASHINGTON, April 14, 2003—One cannot view the F/A-22 Raptor as only a replacement for current Air Force fighters, the Service's top acquisition official told lawmakers April 11.

"[The F/A-22] is basically a technological leap forward to counter the threats we perceive [we will face] in the future," said Dr. Marvin R. Sambur, Assistant Secretary of the Air Force for Acquisition, during testimony to the House Committee on Government Reform Subcommittee on National Security.

Responding to the subcommittee's concerns over the cost and progress of the Raptor, Sambur explained that the Air Force recently presented the Department of Defense with a comprehensive business plan that outlined the need for and viability of the F/A-22.

"We're not here to give you excuses for problems of [past F/A-22 program] performance," he said. "We're trying to make improvements now and in the future."

Air Force officials have taken a comprehensive look at the need for the F/A-22, balanced that with other Service needs, and determined that the Raptor is the way to go, Sambur said.

Under the program's imposed cost cap, the Air Force will only be able to procure 224 Raptors. However, the Air Force

needs at least 381 aircraft to fully meet air expeditionary force, training, and maintenance requirements and to avoid making the F/A-22 another high-demand, low-density asset, Sambur said.

The F/A-22 is developing and implementing state-of-the-art technology, giving leading edge capabilities and pioneering manufacturing techniques that will ultimately yield not only the world's greatest aircraft, but will also establish an invaluable set of lessons learned to developing future complex weapons systems, he said.

The unique combination of capabilities increases the effectiveness of the entire joint force and makes any fight unfair.

"The Raptor is the pathfinder and we have to do it right," Sambur said.

Sambur said he was given a mandate from the Secretary of the Air Force Dr. James G. Roche and Air Force Chief of Staff Gen. John P. Jumper to improve the way the Air Force does business in delivering capability, such as the F/A-22, to the warfighter.

Over the past year, he and the acquisition community have been working to determine the root causes of programs not meeting established baselines and goals resulting in slipped development times, reductions in deliveries, and increased costs.

"Our findings indicate that unstable requirements, faulty cost estimates, lack of test community buy-in, inadequate systems engineering, and unstable funding have led to these problems," Sambur said.



The Air Force recently presented the Department of Defense with a comprehensive business plan that outlined the need for and viability of the F/A-22 Raptor. Dr. Marvin R. Sambur, Assistant Secretary of the Air Force for Acquisition, told the House Committee on Government Reform Subcommittee on National Security that the F/A-22 is basically a technological leap forward to counter threats the United States may face in the future.

Photo courtesy U.S. Air Force

Instilling a strong systems engineering foundation in the acquisition process is the third step. Future acquisition strategy plans that lack the necessary attention to systems engineering will not be signed by future milestone decision authorities, he said.

"I am also demanding that systems engineering performance be linked to contract award fees and to the incentive construction," Sambur said.

The final measure, the implementation of a more disciplined program priority process, will help reduce problems from unstable funding, he said.

"We will also insist on the use of spiral development methods for [future programs]," he told the subcommittee.

Spiral development is the Air Force's preferred approach to acquiring new systems, Sambur said in written remarks. It allows the Air Force to incrementally deliver weapons system capability quickly—providing the warfighter technology as it matures within acceptable program risk.

It will counter funding instability by allowing the Air Force to fund each spiral so potential cuts in funding do not compromise a capability that is complete and ready to be fielded today, he said. Another benefit of spiral development is the flexibility to insert the latest technology into the development and production lines.

"We remain focused on providing the necessary capabilities to the warfighter, and this can only be achieved through effective and efficient management during the development, production and fielding of systems," Sambur said. "Only by incorporating a strong collaborative process, reestablishing our credibility, infusing systems engineering in our acquisition process, prioritizing programs, and implementing spiral development can we overcome the tough challenges ahead."

Editor's Note: This information is in the public domain at <http://www.af.mil/news>.

Therefore, he said he instituted a series of measures to address these underlying causes.

The first is a more agile acquisition policy that emphasizes collaboration between the warfighters, the acquisition community, the engineers, and the testers to foster a team mentality.

"This team continues working together throughout the requirements and development process, providing a stable foundation for the overall program," he said.

The second measure addresses test community buy-in by developing a seamless verification process to ensure that both the development and operational tests occur in a single process.

"By getting the operational testers involved early in the process, they can assess the operational value of developmental testing and reduce the duplication of effort," Sambur explained.

DEPARTMENT OF DEFENSE NEWS
(RELEASED MAY 23, 2003)

ALDRIDGE ANNOUNCES DETAILS OF TANKER LEASE PROGRAM

Under Secretary of Defense for Acquisition, Technology and Logistics Edward C. "Pete" Aldridge today announced the approval of the Air Force KC-767 tanker lease initiative. In the next step, the Secretary of the Air Force will now forward a report to Congressional oversight committees detailing the terms and conditions for review and approval.

The agreement provides for leasing 100 KC-767 aircraft from the Boeing Co. for six years starting in 2006, at a cost of \$131 million lease price plus an additional \$7 million in lease-unique costs per aircraft. The total cost will be less than

\$16 billion. The initiative also includes a provision to purchase the aircraft for about \$4 billion at the end of the lease 2017.

The strategy allows the Air Force to begin replacing the KC-135E tanker fleet three years earlier than planned. With an average age of over 43 years, the KC-135E fleet is the oldest combat weapon system in the Air Force inventory.

The KC-767 will be the world's newest and most advanced tanker. It can offload 20 percent more gas than the KC-135E and unlike the E-model, can itself be refueled in flight. It will also have the capability to refuel Air Force, Navy, Marine, and allied aircraft on every mission.

Editor's Note: This information is in the public domain at <http://www.dtic.mil/armylink/news>.

DEPARTMENT OF DEFENSE NEWS
(RELEASED MAY 22, 2003)

DOD MOVES TO STREAMLINE PROGRAMMING AND BUDGETING PROCESS

Under Secretary of Defense (Comptroller) Dov S. Zakheim today announced changes that will streamline the Department's planning, programming, and budgeting system. This improved Planning, Programming, Budgeting, and Execution (PPBE) process is expected to revolutionize internal DoD budget efforts, increase effectiveness, and add additional emphasis to execution.

The changes come as a result of Deputy Secretary of Defense Paul Wolfowitz' direction to the Senior Executive Council to study and recommend improvements to the overall DoD decision-making processes. Today, Wolfowitz signed the management initiative decision that implements recommended changes to the PPBE.

Zakheim noted that no legislative changes are required and that the Congress will see the same budget justification as it has in the past.

The DoD will evolve from an annual program objective memorandum and Budget Estimate Submission (BES) cycle, to a biennial (two-year) cycle starting with an abbreviated review and amendment cycle for FY 2005. The Department will formulate two-year budgets and use the off-year to focus on fiscal execution and program performance.

The two-year cycle will guide the Department's strategy development, identification of needs for military capabilities, program planning, resource estimation and allocation, acquisition, and other decision processes. This change will more closely align DoD's internal cycle with external requirements embedded in statute and administration policy.

The Quadrennial Defense Review (QDR) will continue to serve as the Department's major statement of defense strategy and business policy. It also will continue to be the single link throughout DoD that integrates and influences all

internal decision processes. Section 922 of Public Law 107-314, the Bob Stump National Defense Authorization Act for fiscal year 2003, amended section 118 of Title 10 of the United States Code to align the QDR submission date with that of the President's budget in the second year of an administration.

The off-year Defense Planning Guidance (DPG) will be issued at the discretion of the Secretary of Defense. The off-year DPG will not introduce major changes to the defense program, except as specifically directed by the Secretary or Deputy Secretary of Defense. There will be no DPG for fiscal 2005.

Rather than a program objective memorandum during the off-year, the Department will use program change proposals to accommodate real-world changes, and as part of the continuing need to align the defense program with the defense strategy.

The Department will use Budget Change Proposals (BCPs) instead of a budget estimate submission during the off-year. BCPs will accommodate fact-of-life changes (e.g., cost increases, schedule delays, management reform savings, workload changes, etc.) as well as changes resulting from congressional actions.

The FY 2005 execution reviews will provide the opportunity to make assessments concerning current and previous resource allocations and whether the Department achieved its planned performance goals. Performance metrics, including the program assessment rating tool, will be the analytical underpinning to ascertain whether an appropriate allocation of resources exists in current budgets. To the extent performance goals of an existing program are not being met, recommendations may be made to replace that program with alternative solutions or to make appropriate funding adjustments to correct resource imbalances.

Editor's Note: This information is in the public domain at <http://www.defenselink.mil/news>.

Four Agencies Honored f

DEPARTMENT OF DEFENSE NEWS
(RELEASED JUNE 5, 2003)

2003 PACKARD AWARDS PRESENTED

The David Packard Award for Acquisition Excellence was presented to four Department of Defense program teams at a June 4, 2003, ceremony at Fort Belvoir, Va.. Making the presentations to the four winners was Acting Under Secretary of Defense for Acquisition, Technology and Logistics Michael W. Wynne. The four teams were recognized for their use of innovation in the acquisition process. This year's winners are: Special Operations Command's Special Operations Craft Riverine (SOCR); the Navy's Joint Services Family of Decontamination Systems; the Air Force's Passive Attack Weapon (PAW) Quick Reaction Capability; and the Joint Air Force/Navy Joint Direct Attack Munitions (JDAM) Project Office.

The David Packard Award was established to recognize Department of Defense (DoD) civilian and military organizations, groups, or teams, which have made highly significant contributions that demonstrate exemplary innovation and best acquisition practices. These awards reflect achievements that exemplify the goals and objectives established for furthering life cycle cost reduction and acquisition excellence in DoD.

In presenting the awards, Wynne commented that these programs "have shown what can happen when we release the power of innovation in our workforce."

The 2003 Packard Award highlighted the winning formulas for the awards:



The Joint Direct Attack Munitions (JDAM) Joint Project Office (Air Force/Navy) Team



The Joint Services Family of Decontamination Systems (Navy) Team

- The JDAM Joint Project Office (Air Force/Navy) team accelerated the production of JDAM, delivering munitions in one-half of the time and one-half of the projected price. This guidance system proved to be more accurate, reliable, and effective than originally required.
- The Special Operations Command SOCR team was innovative in its approach to the successful fielding of a complete SOCR system, allowing a four-person crew to

or Acquisition Excellence



The Passive Attack Weapon (PAW) Quick Reaction Capability (Air Force) Team



The Special Operations Command
Special Operations Craft Riverine (SOCR) Team

carry eight special operations forces in an air transportable armored watercraft.

- The Joint Services Family of Decontamination Systems (Navy) team was selected for its exceptional accomplishment in multi-Service teaming, extensive use of cost as an independent variable, international teaming, and recognition for Foreign Comparative Testing. This system uses

sponded after the Sept. 11, 2001, terrorist attack by delivering a complete and operationally tested system in less than 100 days. The team delivered all logistics support elements, a “targeteering” tool to predict collateral effects, and integration on the F-16 aircraft.

Editor’s Note: This information is in the public domain at <http://www.defenselink.mil/news>.

“These Packard Award-winning programs have shown what can happen when we release the power of innovation in our workforce.”

—Michael Wynne
Acting USD(AT&L)

Commercial-Off-the-Shelf components in its design to decontaminate military equipment.

- The PAW Quick Reaction Capability (Air Force) team re-

ARMY NEWS SERVICE
(RELEASED MAY 28, 2003)
**INSTITUTE FOR SOLDIER
NANOTECHNOLOGIES OPENS**

Curt Biberdorf

NATICK, Mass. (Army News Service, May 28, 2003)—The Institute for Soldier Nanotechnologies, a joint research collaboration between the Army and Massachusetts Institute of Technology, formally opened during a ceremony in Cambridge, Mass., May 22.

Founded in March 2002 by a \$50 million grant from the Army, the institute's mission is to develop technologies for advancing soldier protection and survivability, officials said, by combining basic and applied research in nanoscience and nanotechnology.

Scientists and engineers will be reaching for large results from the smallest of objects. Often at the level of manipulating individual atoms and molecules, nanotechnology involves the design and production of new materials or complex devices at the nanometer scale. A nanometer is about 50,000 times smaller than the diameter of a human hair.

The research may be obtuse, but the benefits are clear, said Charles Vest, president of MIT, during the ceremony. The vision is a 21st century lightweight bulletproof and waterproof battle uniform no thicker than ordinary spandex that monitors health, eases injuries, communicates automatically, and potentially lends superhuman abilities.

"We already have the smartest soldiers. Now we're going to give them the smartest uniforms," said Claude Bolton, Assistant Secretary of the Army for Acquisition, Logistics and Technology.

Maj. Gen. John Doesburg, Transition Team Director, U.S. Army Research, Development and Engineering Command (Provisional), said the importance of the new institute "cannot be overstated.

"When you look back to the Middle Ages and fast forward to today, we can't say we've come a long way," Doesburg said. "The technology that we saw today is revolutionary. What better place than this to do it."

Nanotechnology once seemed far-fetched, but new equipment and tools can already create new materials, and in coming years we'll develop new machines for nanomaterials, said Vest.

Bolton said it was only in the last 10 years that scientists were able to actually see atoms.

"You can't do better than at the atomic level," said Richard Smalley, a professor at Rice University, who further emphasized the thought expressed by previous speakers that the benefits of the institute affect more than the military. "In all this nurturing, we may make the next new technology that leads all people to prosperity. This research will lead to other discoveries that will help the world."

Spc. Jason Ashline from the 10th Mountain Division (Light Infantry) at Fort Drum, N.Y., testified to the importance of the work to be done before cutting the ribbon to open the institute. During a firefight in Afghanistan, the infantryman survived a hit to the chest from an AK-47 rifle round because of the protective body armor he was wearing.

Guests at the event were guided on tours of the Institute's 28,000 square feet of space on the fourth and fifth floors of 500 Technology Square on MIT's campus. The space consists of extensive, flexible laboratories; offices for students, visiting researchers and MIT faculty; and headquarters.

Research is currently under way in protection, performance improvement, and injury intervention and cure.

At three stations, demonstrators showed how fluids could be used to engineer a dynamic armor system that automatically changes from flexible to stiff when a ballistic threat is detected, how two separate nanoscale coatings for water resistance and microbe-killing can be combined and applied to textiles, and a method of creating artificial muscles that could provide extra strength for lifting or jumping, or serve as automatic tourniquets.

The facility contains state-of-the-art nano-fabrication and nano-characterization capabilities along with easy access to the rest of MIT's research infrastructure.

About 150 faculty, graduate students and post-doctoral research associates divided into seven research teams will apply their skills on nearly 50 research projects. Several visiting scientists from Army laboratories and participating industrial partners also will be part of the staff.

Army Research Laboratory in Adelphi, Md.; U.S. Army Natick Soldier Center, and U.S. Army Research Institute of Environmental Medicine, both at the U.S. Army Soldier Systems Center in Natick, Mass.; and industry partners illustrated their roles in making an advanced uniform system with displays at a first floor exhibit.

Roaming about the displays were soldiers wearing the latest uniforms for Objective Force Warrior and Future Warrior. Both are product concepts that will incorporate nanotechnology.

MIT was chosen as the "best of the best" universities for the institute while the industry partners will help to speed transition to the field, said A. Michael Andrews, Deputy Assistant Secretary of the Army for Research and Technology/Chief Scientist, Office of the Assistant Secretary of the Army.

Editor's Note: Curt Biberdorf is with the Natick Public Affairs Office. This information is in the public domain at <http://www.dtic.mil/armylink/news>.



ACQUISITION,
TECHNOLOGY AND
LOGISTICS

THE UNDER SECRETARY OF DEFENSE
3010 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-3010

APR 10 2003



MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
UNDER SECRETARIES OF DEFENSE
ASSISTANT SECRETARIES OF DEFENSE
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE
DIRECTOR, ADMINISTRATION AND MANAGEMENT
DIRECTORS OF THE DEFENSE AGENCIES
DIRECTORS OF THE DOD FIELD ACTIVITIES

SUBJECT: Military Contingency Contracting Force Qualifications

Title 10 United States Code §1724, as amended by Section 824 of the National Defense Authorization Act for Fiscal Year 2002, establishes specific educational requirements for contracting officers (see attachment for details). However, Congress, recognizing the need for qualified military members to support contingency operations, permits the Department of Defense (DoD) to establish qualification requirements for the Contingency Contracting Force (CCF). The CCF consists of those members of the Armed Forces whose mission is to deploy in support of contingency operations and other operations of DoD.

The attached policy establishes the minimum qualification criteria for CCF member development, retention and accession. The Military Departments may supplement the policy to meet organizational needs. Please provide copies of your supplemental policies and procedures as they are issued to Mr. Richard Sylvester, Deputy Director, Defense Procurement and Acquisition Policy (Acquisition Workforce and Career Management), 3060 Defense Pentagon, Washington, DC 20301-3060. My point of contact is Ms. Leslie Blackmon at 703-695-1097 or e-mail: leslie.blackmon@osd.mil.

E.C. Aldridge, Jr.

Attachment:
As stated

Editor's Note: To download the attachment to Secretary Aldridge's memorandum, go to the Director, Defense Procurement and Acquisition Policy Web site at <http://www.acq.osd.mil/dpap/>.



DAU COURSES

DAU ADDS NEW MODULES TO CONTINUOUS LEARNING CENTER WEB SITE

The DAU Continuous Learning Center, in collaboration with the Defense Procurement and Acquisition Policy office, is pleased to announce the availability of two new Continuous Learning Online Modules: Introduction to Knowledge Management (Part A) and Introduction to Knowledge Management (Part B).

Introduction to Knowledge Management (Part A) provides an overview of the basic concepts of Knowledge Management (KM). Part A, Lessons 1 and 2 of this course, have been developed to provide the learner with a common language, the foundation knowledge, the KM value proposition, and awareness of the tools and skills needed to work effectively within a knowledge sharing environment and to foster effective knowledge sharing within an organization.

Introduction to Knowledge Management (Part B) provides an overview of the basic concepts of KM. Part B, Lessons 3 and 4 of this course, have been developed to teach the learner the skills, tools, and methods essential for effective KM.

This course is available to all users of the DAU Continuous Learning Center at <http://clc.dau.mil>; select the Learning Center, select the Course Information and Access, and then select the course title.

EARN CONTINUOUS LEARNING POINTS

To access DAU Continuous Learning Center modules that will help acquisition workforce members fulfill the requirement for 80 continuous learning points every two years, go to http://clc.dau.mil/kc/no_login/portal.asp. Note that this is a separate program from Defense Acquisition Workforce Improvement Act (DAWIA) certification, and classes are open to everyone.

EQUIVALENCY EXAM FOR PMT-250

DAU continues to administer an equivalency exam for its Program Management Tools (PMT-250) course. The equivalency exam is intended to provide an opportunity for students who already possess the knowledge contained in the course to demonstrate their proficiency. It is not intended to take the place of the course for students who are not already proficient in the material. The exam is comprised of seven module areas; *students have only one opportunity to take the exam and must obtain a score of 70 percent or higher in all seven module areas to pass*. If the exam is successfully completed, the student receives credit for course completion. If the exam is not successfully completed, the student will have to apply for and complete a Web-based offering of PMT-250.

Before applying for the exam, students should ensure they meet one of the following criteria: 1) Certified Level III in career fields other than Program Management (PM) and preparing to enter the PM career field training track to take PMT 352; or 2) Certified Level II in the PM career field prior to Oct. 1, 2001, and will be applying to take PMT-352 at a later date.

DAU ANNOUNCES NEW COMBINED CONTRACTING LEVEL III COURSE

Beginning in FY 04, the best of two DAU courses will be combined into one: CON-301 and CON-333 will be combined into a single course—CON 353. This course will be required for Level III certification if the student has not completed *both CON-301 and CON-333* in the past. If the student has completed only one of the previous two courses, he or she will still be required to take the new course for certification.

DAU plans to revise the current schedule for both classes, provide pilot test opportunities for the new course, and make several sections of CON-301 and CON-333 available through the end of FY 2003.

NDIA TO SPONSOR DSAM OFFERINGS FOR INDUSTRY MANAGERS

The National Defense Industrial Association will sponsor offerings of DAU's Defense Systems Acquisition Management (DSAM) course to interested industry managers Aug. 18-22, 2003, at the Crowne Plaza Northstar Hotel in Minneapolis, Minn.; and Nov. 17-21, 2003, at the Adam's Mark Hotel in Orlando, Fla.

DSAM uses the same acquisition policy information provided to DoD students who attend DAU courses for formal acquisition certification. It is designed to meet the needs of defense industry acquisition managers in today's dynamic environment, providing the latest information related to:

- Defense acquisition policy for weapons and information technology systems including discussion of the new DoD 5000 series (directive, instruction, and guidebook).
- Defense acquisition and logistics excellence initiatives.
- Defense acquisition procedures and processes.
- The Planning, Programming, and Budgeting System and the Congressional budget process.
- The relationship between requirements generation, resource allocation, science and technology activities, and acquisition programs.

For further information, contact Christy O'Hara (703) 247-2586 or email cohara@ndia.org. Prospective government students must first contact Air Force Maj. Jim Ashworth at (703) 805-5809 or email james.ashworth@dau.mil.

PUBLICATIONS

2003 ARMY ACQUISITION CORPS CAREER MANAGEMENT HANDBOOK NOW ONLINE

The new 2003 Army Acquisition Corps Career Management Handbook is now online. Published by the Army Acquisition Support Center, the Handbook is designed to inform new workforce members and to act as a reference guide for the more experienced. It clearly outlines the unique requirements for members of the workforce and provides information that will allow them to plan their careers and meet their goals. Download the Handbook from the Acquisition Support Center Web site at <http://asc.rdaisa.army.mil>.

2003 ACQUISITION EDUCATION, TRAINING & EXPERIENCE (AETE) CATALOG NOW ONLINE

The 2003 version of the Army Acquisition Support Center's AETE Catalog is now on ASC's Web site. Keep checking the site for updates to this unique educational tool designed just for the acquisition professional. Questions about the catalog may be directed to Randy Williams in ASC's Career Management Division, 703-704-0102 or e-mail randy.williams@us.army.mil.

SPECIAL ANNOUNCEMENT

ACQUISITION CAREER PROGRAM DEVELOPMENTAL ASSIGNMENT

The Army has issued a special announcement of developmental assignments in multiple functional areas at Headquarters Department of the Army (HQDA) supporting the Department of Defense (DoD) and/or Army Business Initiative Council (BIC).

POSITION: GS 12-15 or military equivalents, in any occupational series in Resource Management; Acquisition Management; Test and Evaluation; Manpower and Personnel; Installation Management; Logistics, and Information Management.

ASSIGNMENT DESCRIPTION/DUTIES: This will be a training assignment in one of the functional areas of the Army or DoD Business Initiative Council (BIC) support team. The BIC is chartered to improve the efficiency of business operations by implementing reforms throughout the DoD or Army that allow savings to be reallocated to higher priority efforts. The BIC serves as the corporate board of directors for these reforms. It is chaired by the Under Secretary of Defense for Acquisition, Technology and Logistics, and is comprised of the Service Secretaries and OSD and OJCS representatives. The developmental assignments will be primarily in support of the Process Function Boards (PFBs) that support the DoD and Army BIC processes. These boards are: Manpower and Personnel, Resource Management, Infor-

mation Technology, Acquisition Management, Test and Evaluation, and Installations and Logistics. The Installations and Logistics board has three functional components: ASA I&E, ACSIM and G4. Duties will include managing administrative actions of the individual boards, helping to analyze and coordinate technical information related to functional areas, and working as a liaison between the support team, the functional boards and the BIC initiative champions.

AREA OF CONSIDERATION: Department of the Army employees in the following categories:

- On permanent appointment to the competitive service.
- Excepted service or non-appropriated fund employees, with competitive status.
- Eligible for competitive conversion or appointment to the competitive service, e.g., family members eligible under EO 12362 as amended.

Selectees will be assigned at present permanent grade level.

TOTAL NUMBER OF POSITIONS: up to 15

LENGTH OF PROGRAM: 3-12 months

LOCATION OF ASSIGNMENT: HQDA, Pentagon, in various staff support elements. If a selectee is from outside the commuting area of the developmental assignment, the costs of the travel and up to 55 percent of the maximum payable local per diem will be centrally funded.

To read the full announcement, go to the Army Acquisition Support Center Web site at <http://asc.rdaisa.army.mil> and scroll down to the bottom of the page.

DAU STRATEGIC PARTNERSHIPS

DAU MIDWEST REGION SIGNS LOI'S WITH LOCAL COLLEGES, UNIVERSITIES, & BUSINESS ASSOCIATIONS IN SUPPORT OF MIAMI VALLEY ACQUISITION CONSORTIUM (MVAC)

Providing a talented Acquisition, Technology and Logistics (AT&L) workforce to replace retiring personnel has become a crucial issue for the Department of Defense. To address that, the Defense Acquisition University Midwest Region (DAU-MW) joined with local colleges, universities, and business associations to develop the Miami Valley Acquisition Consortium (MVAC). The main goal of MVAC is to create the best-prepared acquisition workforce in Ohio. One of the major MVAC initiatives is to focus on increasing youth awareness about career alternatives and opportunities in acquisition and logistics. Full implementation of a program involving high school students, teachers, and counselors is

targeted for 2004. Another goal of the MVAC is to provide current employees with additional training options. MVAC members are teaming to determine if DAU courses may be accepted for college credit. Team members are also discussing DAU, college, and university speaker-exchange programs.

The most immediate result of this unique effort is the development of several partnerships committed to sharing knowledge, ideas, and best practices. Three of the partners—the University of Dayton, Wright State University, and Sinclair Community College—joined with Gerald Emke, Dean of DAU-MW, in a ceremonial signing of Letters of Intent (LOIs) on Feb. 28, 2003. Signatories of the LOIs were: Peter G. Wagner, School of Business, University of Dayton; Dr. Richard E. Williams, Associate Dean for Academic Programs, Wright State University; and Daniel R. Ricica, Chairperson, Management, Marketing, Purchasing and Transportation, Sinclair Community College.

These LOIs establish a strategic partnership to meet current and emerging DoD AT&L workforce education and training needs. Central Michigan University, Eastern Michigan, and Cuyahoga Community College have also signed LOIs with DAU-MW. Partnership members will provide a coordinated effort to meet the goals of MVAC. For more information on this strategic alliance, contact Pam Oxendine, DAU-MW Professor, at Pam.Oxendine@dau.mil.

LOCKHEED MARTIN PROGRAM MANAGEMENT INSTITUTE

As part of the DAU partnership activities, six members of DAU will attend the Lockheed Martin's Program Management Institute at their new Center for Leadership Excellence facility in Bethesda, Maryland. This is a three-day program sponsored by the corporate Vice President, Science and Engineering, and is presented by outside consultants and Lockheed Martin executives with significant program management experience. The primary topics include: the role of the program manager, lessons learned from the program management experience and customer issues.

The six selectees and their respective DAU business units are: Michael Asada (DAU-Midwest Region); Thomas Edison (DAU-West Region); John Horn (DSMC-School of Program Managers); John Kelley (DAU-Capital and Northeast Region); Randy Smith (DAU-Capital and Northeast Region); and Randy Zittel (Capital and Northeast Region). Six alternates were also selected.

These attendees were selected from 17 applicants based on responses to three criteria. The criteria included documenting:

personal goals for the training; preparation; and contributions they will make from the course to further DAU's vision and mission. Additionally the applicants discussed their DAU departmental expectations with their supervisors and included those comments.

Besides attending the course and using the experience in their work at DAU, the six attendees will collaborate on a variety of actions to share their experiences with the rest of their respective campus members. Participants earn 30 hours of continuous learning points. DAU expects to continue this partnering experience offered by Lockheed Martin.

DAU AND ROCKWELL COLLINS FORM STRATEGIC PARTNERSHIP

On April 4, 2003, the Defense Acquisition University (DAU) and Rockwell Collins formed a strategic partnership by signing a formal Memorandum of Understanding (MOU). The signatories of the MOU were DAU President Frank Anderson Jr., and Rockwell Vice President for Government Operations and Government Systems, Michael K. McDonald.

The MOU establishes the framework for DAU and Rockwell to pursue educational opportunities and to share training resources.

For more information about this partnership, contact Wayne Glass, Director for Strategic Partnerships, DAU Strategic Planning, at Wayne.Glass@dau.mil.

DAU SIGNS MOA WITH FEDERAL SUPPLY SERVICE

In efforts to extend its educational strategic partnerships and leverage learning opportunities, the Defense Acquisition University (DAU) and Federal Supply Service (FSS) signed a Memorandum of Agreement (MOA) on May 7, during the 2003 GSA Expo held in San Antonio, Texas. The MOA provides opportunities to share course materials, training materials, best practices, and selected research information. The signatories of the MOA were: Frank Anderson Jr., DAU President, and Donna Bennet, Commissioner, FSS.

The MOA establishes strategic partnership to meet acquisition education goals and increase the skills, knowledge, and abilities of the DoD AT&L workforce.

For more information on the partnership, contact Wayne Glass, Director for Strategic Partnerships, DAU Strategic Planning, at Wayne.Glass@dau.mil.

DAU AND EMBRY-RIDDLE AERONAUTICAL UNIVERSITY (ERAU) FORM STRATEGIC PARTNERSHIP

The Defense Acquisition University (DAU) and the Embry-Riddle Aeronautical University (ERAU) signed an Articulation of Agreement on May 13, 2003, in an attempt to 1) encourage students to transfer to the Associate/Bachelor of Science in Technical Management or to Associate/Bachelor of Science in Professional Aeronautics programs offered by ERAU; and 2) to smooth the transfer process by minimizing loss of academic credit. The Agreement serves as a quick and clear reference showing how DAU's courses are applicable to ERAU's Technical Management and Professional Aeronautics degree programs.

For more information on this partnership, contact Wayne Glass, DAU Director for Strategic Partnerships, at Wayne.Glass@dau.mil. For more information on degree programs offered by Embry-Riddle, visit the ERAU Web site at www.embryriddle.edu.



Dr. Robert E. Myers (left), Chancellor, Extended Campus Embry-Riddle Aeronautical University (ERAU), and Army Col. Ronald C. Flom, DAU Commandant, formalize a DAU-ERAU partnership at a ceremony held on May 13 at DAU Headquarters, Fort Belvoir, Va.

DAU AND UNIVERSITY OF KENTUCKY FORM STRATEGIC PARTNERSHIP

On May 21, Army Col. Ronald Flom, Commandant, Defense Acquisition University (DAU), signed a Memorandum of Understanding (MOU) with the University of Kentucky. The signing took place during the University of Kentucky's Lean Manufacturing Conference, held in Lexington, Ky. This strategic partnership provides an important opportunity for research opportunities in lean manufacturing, sharing of materials, and addendums for degrees and certificates.

The signing of the MOU establishes a strategic partnership leading to educational opportunities for currently enrolled and potential students of both institutions. The agreement is designed to facilitate the transfer of DAU course credits toward University of Kentucky degree or certificate programs.

For more information on this partnership, contact Wayne Glass, Director for Strategic Partnerships, DAU Strategic Planning, at Wayne.Glass@dau.mil. For more information on the degree programs offered by the University of Kentucky, visit their Web site at <http://www.uky.edu>.

AWARDS

ARMY SPC. NORMITA DAVISSON NAMED ENLISTED PERSON OF THE 4TH QUARTER FOR 2002

On May 13, 2003, DAU President Frank Anderson Jr., presented Army Spc. Normita Davisson the Enlisted Person of the 4th Quarter (EPOQ) 2002 Award, during a ceremony held at DAU Headquarters, Fort Belvoir, Va. Davisson was chosen from a field of top rated nominees competing in the EPOQ program. The EPOQ program recognizes personnel for outstanding performance, leadership, support of command mission, and community involvement.



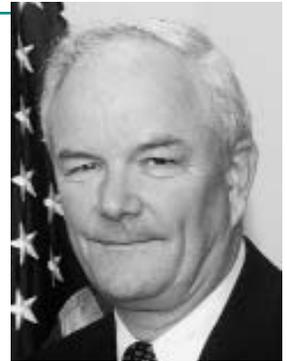
In addition to the Certificate of Commendation, she received a \$50 gift certificate to the Post Exchange and a \$25 gift certificate. Davisson is an Audiovisual Production Specialist in the DAU Video Services Department.



ACQUISITION,
TECHNOLOGY AND
LOGISTICS

**PRINCIPAL DEPUTY UNDER SECRETARY OF DEFENSE
3015 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-3015**

APR 4 2003



MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
DIRECTOR, DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARIES OF DEFENSE
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE
DIRECTOR, ADMINISTRATION AND MANAGEMENT
DIRECTORS OF THE DEFENSE AGENCIES
DIRECTORS OF THE DOD FIELD ACTIVITIES

SUBJECT: Forecast of Policy for Unique Identification of Tangible Items – UPDATE

On February 11-12, 2003, the Department of Defense (DoD) Unique Identification (UID) Integrated Product Team (IPT), met to further define policy requirements and an implementation strategy to achieve a long-term UID item marking vision. During the two-day offsite meeting, the IPT re-validated the vision established in my December 19, 2002 memorandum, defined key terms for unique identification of tangible items, and made great strides in rationalizing requirements of existing standards to support DoD's use of unique identification. The purpose of this memorandum is to communicate that progress and establish the next steps for the UID IPT.

The IPT validated that:

- The purpose of UID is to identify a set of data for tangible assets that is globally unique and unambiguous, ensures data integrity and data quality throughout the life of the asset, and supports multi-faceted business applications and users.
- The unique identification of tangible assets will rely, to the maximum extent practicable, on international standards and commercial item markings and not impose unique government requirements.
- Implementation of UID will facilitate item tracking in DoD business systems as well as the capture of reliable and accurate data for life-cycle asset management, accountability, and financial purposes.
- This UID solution is different from that being developed for real property.

The IPT identified the minimum data set for the UID and defined several key terms integral to the implementation of a UID policy. Included in those terms are the data content elements of the UID. Familiarization and understanding of those key terms and the evolving policy can be accomplished by reviewing the attachments to this memorandum.



Additional policy communications will be forthcoming as further definition is achieved. **My plan remains to make UID item marking a mandatory requirement for all new weapons systems programs, including major modifications, no later than July 2003.**

The IPT will continue to work on remaining issues in the following areas:

- Develop policy for marking of tangible items already in inventory and operational use, specifically focusing on requirements of major system modifications.
- Develop policy modifications to MIL-STD-129, MIL-STD-130, DoD 4140.1-R, DoDI 5000.2, DoDI 5000.64, DoD 7000.14-R, CJCSI 3170.1C, DCMA One Book, and MIL Handbook 61A to ensure synchronized policy execution.
- Issue an Advance Notice of Proposed Rulemaking to expedite two Defense Federal Acquisition Regulation Supplement (DFARS) cases:
 - One on item marking, and
 - One on item value.
- Develop business strategies to prioritize the application of UID to legacy items.
- Submit proposed collaborative standards solution through International Organization of Standards (ISO) process to obtain approval by Sub-Committee 31.
- Prepare a pledge document for key business stakeholders to ensure support for this strategic imperative.
- Develop a users guide on UID requirements and application.
- Determine minimum architecture/systems requirements to capture UID information at inspection and acceptance and identify opportunities for rapid implementation.

The point of contact is Lt Col Gregory Redick. Questions concerning this guidance should be addressed to him at (703) 614-3883 or by e-mail at gregory.redick@osd.mil.

Attachment:
As stated



MICHAEL W. WYNNE

Editor's Note: To download the attachment to Secretary Wynne's memorandum, go to the Director, Defense Procurement and Acquisition Policy Web site at <http://www.acq.osd.mil/dpap/>.



ACQUISITION,
TECHNOLOGY AND
LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, D.C. 20301 - 3000

APR 4 2003



MEMORANDUM FOR DIRECTORS, DEFENSE AGENCIES
ACTING DEPUTY ASSISTANT SECRETARY OF THE ARMY
(POLICY AND PROCUREMENT), ASA(ALT)
DEPUTY ASSISTANT SECRETARY OF THE NAVY
(ACQUISITION MANAGEMENT), ASN(RDA)
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE
(CONTRACTING), SAF/AQC
DIRECTOR, DEFENSE CONTRACT MANAGEMENT AGENCY
EXECUTIVE DIRECTOR, ACQUISITION, TECHNOLOGY,
AND SUPPLY (DLA)

SUBJECT: Acquisition Flexibility for Urgent Needs

We are challenged every day to solicit industry, award and modify contracts, deliver capability and make payment faster. Speed is increasingly a critical measure of success, particularly as we support overseas military operations and the defense against terrorism. As we create strategies to quickly meet these needs, we should use the flexibility of FAR and DoD FAR Supplement (DFARS) authorities that exist to support urgent situations and national security requirements. In those circumstances where you are specifically precluded from taking actions you determine necessary, I expect you to support, authorize, or seek appropriate deviations and give me feedback.

The Air Force recently issued guidance highlighting many existing techniques for rapid, agile contracting support (available at <http://www.acq.osd.mil/dpap>). I wholeheartedly support these techniques and urge you to put them into practice where appropriate. Recently, we published significant changes to the FAR authorized by the Homeland Security Act. These authorities, coupled with DoD's temporary emergency procurement authority, increase the thresholds for using simplified acquisition procedures. They also allow us to treat buys that directly support defense against or recovery from terrorism or chemical, biological, nuclear, or radiological attack as commercial items with no dollar limitation for use of simplified acquisition procedures. These are bold opportunities that, if used with diligence, can achieve significant results for our customers. You may find the attached matrix helpful in promoting the use of these authorities.

I challenge the acquisition leadership to push new and existing authorities to the contracting officer and aggressively pursue and approve FAR and DFARS deviations when needed. Please let me know when you identify opportunities to improve processes, shorten cycle times, and enhance responsiveness to the customer. Our Web site to collect this information is <http://www.acq.osd.mil/dp/dars/transf.htm>. We will use your input to assess results and make needed changes.



Please pass on my gratitude to the acquisition workforce for their continued dedication and commitment to the Department's mission. My points of contact are Ms. Angelena Moy (DPAP/DARS) at (703) 602-1302 or e-mail: angelena.moy@osd.mil and Mr. William Timperley (DPAP/Policy) at (703) 697-8336 or e-mail: william.timperley@osd.mil.



Deidre A. Lee
Director, Defense Procurement and
Acquisition Policy

Attachment:
As stated

Editor's Note: To download the attachment to Lee's memorandum, go to the Director, Defense Procurement and Acquisition Policy Web site at <http://www.acq.osd.mil/dpap/>.

NEW DOD 5000 SERIES DOCUMENTS RELEASED AND SIGNED

With an eye toward increasing the authority and independence of the program manager, the new DoD 5000 series is now authorized. The new DoD Directive 5000.1 and DoD Instruction 5000.2 are available at: <http://www.acq.osd.mil/dpap>.

DFARS TRANSFORMATION

The Defense Federal Acquisition Regulation Supplement (DFARS) Transformation task force is actively seeking input from within the Government and from industry with respect to ideas for improvements to the DFARS and the process by which the DFARS is written. The Office of the Secretary of Defense (OSD) has established a Web site to collect ideas from interested parties. The task force is truly open to any and all ideas, and we highly encourage you to take advantage of this opportunity to submit your ideas individually via the Web site at <http://www.acq.osd.mil/dp/dars/transf.htm>.

Although the initial deadline has passed for submission of proposals, the task force will continue to collect proposals for consideration. Further, proposals will continue to be posted on the DFARS Transformation Web site so that you may view all improvement proposals submitted to date and so you can see what others within the government and industry are recommending.

NEW GAO REPORT (GAO-03-645T) AVAILABLE

Best Practices: Better Acquisition Outcomes Are Possible If DoD Can Apply Lessons Learned From F/A-22 Program, April 11, 2003. This report reviews commercial best practices and identifies key enablers to the success of product development programs and focuses on how DoD can better leverage its investments by shortening the time it takes to field new capabilities at a more predictable cost and schedule. To download the report, go to the Air Force Center of Acquisition Excellence (ACE) Web site at <http://www.safaq.hq.af.mil/ACE/>.

HOMELAND SECURITY ACT—FEDERAL EMERGENCY PROCUREMENT FLEXIBILITIES

The Federal Acquisition Regulation (FAR) was changed via Federal Acquisition Circular (FAC) 012 on Jan. 27, 2003, to implement Homeland Security Act purchasing flexibilities across all Federal Agencies. DoD is operating under similar Temporary Emergency Procurement Authorities authorized in FY02. A summary matrix of the revised authorities is available in MS Word and PDF at <http://www.acq.osd.mil/dp/dars/new.html>.

OPERATION IRAQI FREEDOM AIR FORCE CONTRACTING SUPPORT

Charlie E. Williams Jr., Deputy Assistant Secretary of the Air Force (Contracting) and Assistant Secretary (Acquisition), issued a memorandum on March 21, 2003, directing all members of the Air Force contracting community to “lean way forward” and proactively plan for known and anticipated customer needs during OPERATION IRAQI FREEDOM. To that end, he directed them to use all available techniques to provide rapid and responsive support to meet warriors’ needs such as oral solicitations, “Unusual and Compelling Urgency” exceptions to the Competition in Contracting Act of 1984, letter contracts, and undefinitized contractual actions. “Put the necessary contract vehicles and supporting documents in place as soon as possible,” Williams said. “We must create solutions, around the globe, providing our customers with the rapid, agile combat support needed to help ensure victory.”

Points of contact for the OPERATION IRAQI FREEDOM policy are Dave Powell, DSN 425-7062, Commercial (703) 588-7062, david.powell@pentagon.af.mil; and Air Force Lt. Col. Al Boykin, DSN 425-7073, Commercial (703) 588-7073, al.boykin@pentagon.af.mil.

ARMY CONTRACTING SUPPORT

Emily Clarke, the Army’s Director of Procurement and Industrial Base Policy issued a memorandum on March 19, 2003, stating that all contract requirements related to the support of the nation’s armed forces “should be accorded the highest priority in our offices.” It is imperative, she stated, “that we employ the best tools available to support them.” Clarke urged the Army’s Policy Chiefs and Principal Assistant for Contracting (PARC) Offices to provide “unprecedented delivery times in the most cost-effective manner.” To that end, she published a list of contract options to consider for accelerated support. Review the entire list at <http://www.acq.osd.mil/dp/dars/new.html>.

NAVY CONTRACTING SUPPORT

M.Jaggard, Chief of Staff/Policy for the Office of the Assistant Secretary of the Navy (Research, Development and Acquisition), issued a memorandum to Department of the Navy major commands on April 7, 2003, that delegated authority to heads of naval contracting activities to establish increased micropurchase and simplified acquisition thresholds, and streamline acquisition procedures. The delegation of authority, implemented under the provisions of Federal Acquisition Circular 2001-12, issued Jan. 24, 2003, will expedite delivery of supplies, services, and procurements for the nation’s defense.

2003 AUSA LOGISTICS SYMPOSIUM & EXHIBITION

Program Executive Officers (PEOs) and Project Managers (PMs) from throughout the Army journeyed to the 2003 AUSA Logistics Symposium & Exhibition in Richmond, Va., from April 22-24. Maj. Gen. Terry E. Juskowiak, Commanding General, United States Army Combined Arms Support Command/United States Army Quartermaster Center and Fort Lee and Commandant, United States Army Quartermaster School, Fort Lee was the host for the event.

PEO Aviation; PEO Combat Support and Combat Service Support; PEO Command, Control, Communications Tactical; PEO Enterprise Information Systems (EIS); PEO Soldier; PEO Simulation, Training and Instrumentation; and PEO Tactical Missiles exhibited.

Also, PMs from Automatic Identification Technology; Brigade Combat Team; Force Projection; Force Sustainment Systems; Heavy Tactical Vehicles; Light Tactical Vehicles; Petroleum and Water Systems; Physical Security Equipment; Recovery; Sets, Kits and Outfits; and Test, Measurement, & Diagnostic Equipment exhibited their wares.



PEO EIS received praise from a number of senior leaders at the AUSA Logistics & Symposium Exhibition. Combat Service Support Automated Information Systems Interface (CAISI) is part of PM Defense Communications and Army Transmission Systems. The Deputy Chief of Staff of the Army and G-4 (Logistics) Lt. Gen. Charles Mahan (left), Alphonso McFarlin of Program Office CAISI, and Lt. Gen. John Caldwell, the Military Deputy/Director of the Army Acquisition Corps in the Office of

the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) discuss the future use of CAISI. CAISI is an approved, secure, self-healing wireless local area network that provides seamless communications interface between combat service support battlefield computers and commercial communications systems using line of sight transmission in the field.

AUGUST 10-14, 2003

The International Society of Logistics (SOLE) invites your participation in *SOLE 2003*, the 38th Annual International Conference and Exhibition at the Von Braun Conference Center in Huntsville, Ala. For registration information, call 301-459-8446 or go to <http://www.sole.org>.

AUGUST 12-14, 2003

The Army Acquisition Senior Leaders' Conference (formerly the PEO/PM/Acquisition Commander Conference), will be held this year in Seattle, Wash. Attendance is by invitation

only. This year's theme will be "Army Acquisition Corps—Strengthening Our Link with the Warfighter." Information on the conference will be posted on the Acquisition Support Center, U.S. Army Acquisition Corps Web site at <http://asc.rdaisa.army.mil/>.

SEPTEMBER 2003

The Association of the United States Army (AUSA) will hold an Acquisition Symposium in Falls Church, Va., in September 2003. Watch the AUSA Web site at <https://www.ousa.org/www/ia.nsf> for more details in the coming weeks.

DAU Visual Arts and Press Director Retires

Greg Caruth—A Career by Design

COLLIE J. JOHNSON

My friend—actually my boss—retired today, June 30, 2003. About 10 years ago Greg Caruth spoke with me after I transferred to DAU's Visual Arts and Press Department as managing editor of *PM Magazine*. "If all goes well, we'll have a decade of working together on PM," he casually remarked to me that day in his capacity as DAU Visual Arts and Press Director. Somehow, some way, I turned my head for a brief moment and that decade passed.

Greg has been the Visual Arts and Press Director for so many years no one can remember when he wasn't around. When he first reported to the Defense Systems Management School (DSMS) back in 1971 as a young Air Force recruit, no one could have foreseen—especially Greg—that he would stick around for over 33 years.

He was one of the original Air Force cadre assigned to DSMS, and served in a military or civilian capacity over the years under the leadership of all but one of the 15 Defense Systems Management College (DSMC) Commandants, two Defense Acquisition University (DAU) Commandants, and two DAU Presidents. He was an integral part of ensuring the continuity of the DSMS, DSMC, and DAU identity as he watched the transition of DSMS over the years from a school to a college in 1976, and from a consortium college to consolidation as part of the Defense Acquisition University in 2000.

After leaving the Air Force and DSMS, Greg became a civilian in 1975 and worked nearly a year at the Army Logistics Management Center (now College), at Fort Lee, Va., followed by four years at the National Defense University, Fort McNair, Washington, D.C. Returning to the Defense Systems Management School in 1979, which by then had become the Defense Systems Management College, he became the supervisor of DSMC Visual Arts. And in 1995, he became Director of DAU Visual Arts and Press



As a young airman assigned to the Defense Systems Management School, Feb. 5, 1974.

Looking the part of artist-in-residence and Chief, Graphic Arts Branch, Defense Systems Management College, July 1979.



when the University Press and Visual Arts Departments merged.

Greg is best known for his nationally recognized DSMC and DAU exhibits and posters at conferences throughout the Washington, D.C., area, with themes such as Uncle Sam, Leonardo da Vinci, Sun Tzu, Pharaoh, Cave Man, and Star Warrior. He also founded and sculpted the art for the Acker Skill in Communications Award. Other sculptures he created were bronze busts of the late Army Brig. Gen. Winfield S. Scott, first DSMS Commandant; and DSMS founder, the late David Packard, former Deputy Secretary of Defense.

Words to Leave By

Like Greg, I too am nearing the retirement that always loomed in the distant future. It's true. The years do go by "quicker than a weaver's shuttle." And the retirement that seemed so far off now becomes a double-edged sword: freedom from

the workplace, but also a reminder of our own mortality and how fleeting the years truly are.

Those of us who worked for Greg and others who have known him well for many years all echo a united sentiment: “Who will they ever get to replace Greg?” Throughout the DAU main campus at Fort Belvoir as well as DAU’s five regions, his beautiful art work, sculpture, and carefully selected prints and furnishings brighten our day and inspire us.

Thanks Greg—for a career by design from which we at the Defense Acquisition University all reaped the benefit.

Postscript

Greg will pursue a second career in interior design and furnishings at Simms Furniture in Fredericksburg, Va., where he resides with his wife Rita.



▲ Portraying Pharaoh's Chief Builder in his “Tribute to Ancient Acquisition Management” exhibit, which debuted at FOSE 2002. Greg designed a number of exhibits for DAU over the years—all of them unique, and all of them show stoppers.

Pictured in November 1998 with the bronze sculpture he created honoring the late David Packard, former Deputy Secretary of Defense and founder, Defense Systems Management School (College). The bust resides permanently in the lobby of the MacArthur Building, which is currently the DAU Headquarters at Fort Belvoir, Va. The clay original, which took about 35 hours to create at his home, was molded and cast at Equestrian Forge foundry in Leesburg, Va.

Vision and Cultural Change in Government Satellite Programs

Three Most Important Approaches to Changing Culture: Communication, Communication, Communication

DR. KENNETH D. SHERE • DR. SCOTT R. TURNER

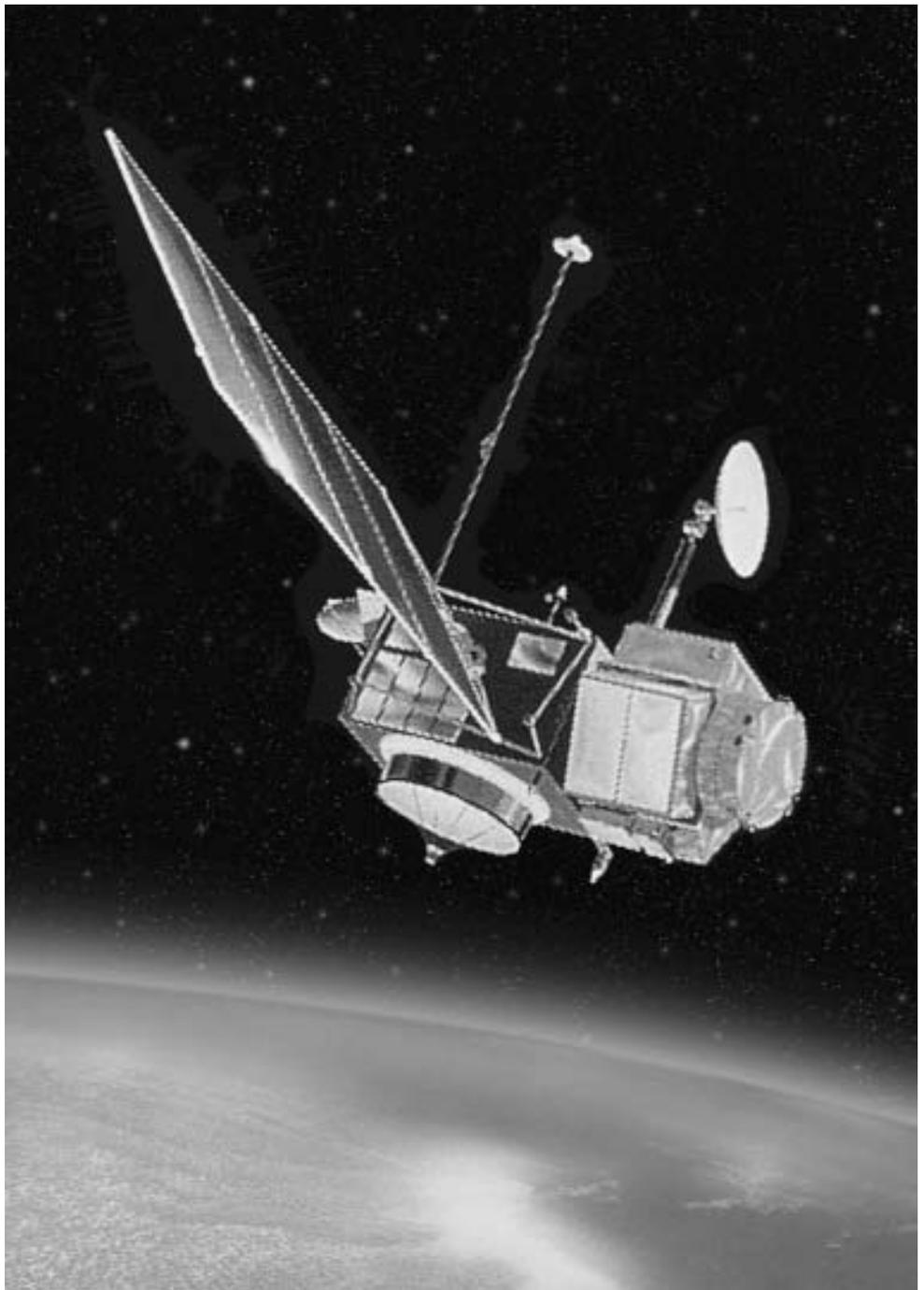
One of the most interesting challenges an organization can face is radical change. The urgency for change can have many reasons, including congressional pressure, funding cuts, and new requirements. Whatever the reason, in this article we look at lessons learned when a program manager has a vision for a new way of doing business.

From Our Perspective

In our work with government space programs we've seen this many times—from programs struggling to deploy new types of sensors to programs faced with increased requirements *and* budget reductions. In this article we summarize the most important program management lessons we've learned from our experiences.

We'll focus on government space programs. The Aerospace Corporation is a Federally Funded Research and Development Center (FFRDC) providing technical support to the Air Force and the National Reconnaissance Office (NRO)

***Shere** is a Senior Engineering Specialist at The Aerospace Corporation where he is on senior staff to the Computer and Systems Engineering Subdivision. He holds a B.S. in Aeronautical and Astronautical Engineering and a Ph.D. in Mathematics—both degrees from the University of Illinois. He has many years' experience in systems engineering, management, and strategic thinking. **Turner** is Director, Ground Systems Department at The Aerospace Corporation. He holds a B.S. in Computer Science from Washington University and a Ph.D. in Computer Science from the University of California at Los Angeles. He has extensive experience in satellite ground systems, networks, expert systems, and object-oriented software development.*



on virtually all of their satellite programs. The Aerospace Corporation also supports the National Oceanic and Atmospheric Administration (NOAA), and the National Aeronautics and Space Administration (NASA). This gives us a unique perspective across almost all government satellite programs.

Many of these lessons may be familiar to anyone with program management experience. This should come as no sur-

The Aerospace Corporation is a Federally Funded Research and Development Center (FFRDC), providing technical support to the Air Force and the National Reconnaissance Office on virtually all of their satellite programs.

prise; as Aerospace CEO Dr. William Ballhaus likes to say, “*We aren’t making any new mistakes—we keep making the old mistakes over and over again.*” Nonetheless, we feel our results may be useful, especially to those with limited insight into the government space program.

Nucleus of Lessons Learned

The lessons we cite in this article are based on discussions with government program managers, vendors, and commercial satellite operators. We also drew from our cumulative 50+ years of experience in space programs, and the expertise of our colleagues at the Aerospace Corporation. The Aerospace Corporation also has a robust program of knowledge capture to preserve corporate expertise, and this proved a valuable resource also.

We surveyed six government programs; talked with three vendors of Telemetry, Tracking, and Commanding (TT&C) systems for satellite ground stations; investigated three commercial companies; and reviewed two studies on Commercial Off-the-Shelf (COTS) software to determine lessons learned in developing ground stations. We also surveyed papers presented at the Ground System Architecture Workshop (GSAW) in 2002 and reviewed papers from previous years. The results of these activities form the nucleus of our lessons learned.

LESSON 1: VISION IS CULTURAL CHANGE

The strategic perspective talks to vision, organizational structure, and culture. These items change at different rates causing conflicts and difficulty in realizing the vision.

Vision defines the future, the goals needed to achieve that vision, and the performance metrics needed to measure progress toward that vision. Vision is relatively easy to obtain. In our experience, most organizational leaders think strategically and have a vision of where they need to be. Where most leaders fail is in creating a strategy to achieve the envisioned future. A strategy is no more than a plan for achiev-

ing the organization’s goals. It identifies necessary changes to the organizational structure and relationships among organizational components. This seems relatively simple, so why do most strategic plans fail?

The answer is that most leaders view a strategy as a product change rather than a culture change. When a telephone company proclaims the vision of “Broadband Internet provider,” they are not simply embracing a new product, but a new corporate culture. They are changing the rules for success that have been used by many of their senior people, and the rules taught to the next generation of leaders. Introducing broadband Internet products the same way *call waiting* was rolled out is a recipe for failure. Changing an organization’s culture is difficult; it requires different methods than changing a product line.

A recent satellite program provides a good example of this problem. On his own authority, a director began an innovative effort to reduce costs. He implemented a program of process improvement that would result in substantial reductions in operations and maintenance costs. However, the program was terminated before it had a chance to show results. Why? The director made two mistakes.

- He did not provide a strategic vision to his executive management (this is part of Lesson 3, discussed later in this article).
- He did not spend enough time on cultural issues.

Consequently, most senior managers reporting to him did not embrace the effort. Both his senior managers and executive management evaluated the effort based upon the “old rules”—the existing corporate culture—and judged it unsuccessful. The three most important approaches to changing culture are communication, communication, communication.

The culture of an organization is the set of rules for success that we teach the next generation. These rules are rarely docu-

mented or taught explicitly. They are learned by “osmosis” from the previous generation or created by the employees themselves. This is why it is so hard to change an organizational culture. It often requires a new generation of employees to embrace a new culture, which is why taking five or more years to change an organization’s culture is not uncommon. Considering that military personnel typically have a three-year assignment, cultural change in their organizations needs to be sustained across management changes—this exacerbates the difficulty in cultural change.

The strategic perspective helps achieve a vision change by: 1) focusing effort on cultural change, and 2) providing understanding to everybody involved (e.g., operators, system users, budget personnel, executive management, and congressional staffers). If the director mentioned previously had created a strategic perspective and sold that to his management, he would likely have retained the funding he needed for success.

LESSON 2: CHANGE IS HARD

Even when vision exists and a strategic plan has been created, implementing change remains extremely difficult. *People and organizations resist change.*

A program manager (speaking about eliminating stovepipes within a major government program) said, “Cultural issues can overwhelm good technical engineering.” Similarly, the Vice President of a commercial satellite communications company admitted, “The largest hurdle to success for consolidating [satellite operations] is organizational.”

In a front-page article, *The Washington Post* pointed out that major corporations in the airlines, electronics, computers, telecommunications, Wall Street, pharmaceuticals, automobile, and fast food industries refused to seriously consider changing their business models during the 1990s—even though clear signs of impending problems existed (S. Pearlstein, “When Business Plans Go Bust,” Jan., 2003). These companies included United Airlines, McDonald’s, Hewlett-

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Packard (HP), AOL, Verizon, and every non-discount stock brokerage.

The results of ignoring your business model can be disastrous, especially when combined with other market factors.

- United Airlines is in Chapter 11 because their labor costs are very high, the spoke and hub approach is generally inefficient from cost and customer satisfaction perspectives, and their service has deteriorated.
- McDonald’s experienced its first losing quarter *ever* and is still losing business in the United States due to a more health-conscious public.
- HP bought Compaq in a bitter takeover battle and is trying to find a new identity.

- AOL Time Warner is worth less today than the former Time Warner was worth before the merger, partially because high-speed modems and excellent search engines cut down the need for AOL services.
- Verizon has been losing money on its long distance phone service and has been unable to bring high-speed services to the home—but their recent efforts in the cellular phone market have been successful.
- Traditional stock brokerages have been losing substantial business to discount brokerages because transactions are cheaper and full service has dubious value when customers lose confidence in advice provided by stock brokers.

Recognizing the difficulty of change—and doing something about it—is critical to future success.

LESSON 3: LEARN FROM SIMILAR SYSTEMS

Tremendous overlap and similarity exists between military and civilian organizations. This is why retired generals like General Gordon Sullivan are able to write successful business books (Sullivan, G., and Harper, M., *Hope Is Not a Method: What Business Leaders Can Learn from America’s Army*, Broadway Books, 1997) and have had successful second careers as consultants. Both military and civilian organizations must take advantage of this similarity by looking to the other community for successful (and unsuccessful) business cases.

For example, a typical civilian government Satellite Operations Center (SOC) operates 15 satellites with 12 operators per shift. Does the program manager of the SOC need to build a business case for more consolidated operations? No. The case has already been made in the commercial sector:

- Iridium operates 78 satellites with 6 operators per shift.
- GPS operates 24 satellites with 2 operators per shift.
- Intelsat operates 23 satellites with 3 operators per shift.

- One COTS vendor uses the guideline of 6 to 12 satellites per operator per shift.
- Another COTS vendor uses the guideline of at least 4 satellites per operator per shift.

Of course, there are some differences between the government and civilian sectors. Some government satellites are significantly more complex than commercial satellites. Complexity is not, however, an excuse to ignore this business case, but an opportunity to adapt the business case for the government sector. In this instance, the business case still works for command and control of the satellite, but additional effort is needed for operating the payloads.

Program managers should be aware of similar programs in other sectors, and analyze those programs for successes and failures before embarking on their own changes. This is particularly useful for military program managers, who typically operate under more conservative operating rules than their civilian counterparts. Success and proven technology in the commercial sector can be a bellwether for the military sector.

LESSON 4: USE BEST PRACTICES

Both NRO and Space Based Infrared Satellite (SBIRS) program office personnel have stated that program risks are relatively low if you plan the effort and use good systems engineering throughout the life cycle.

The following is a list of best practices identified by the organizations we interviewed:

- **Automate as much as possible, both operations and the acquisition process.** The purpose of this automation is to reduce operations and maintenance cost, and to automate processes that are easy for machines but onerous for people. In the case of acquisitions, define a meaningful metrics program ; i.e., you should be able to make decisions based on the results of your metric calculations. Automate the collection of metric data and the analysis of this data whenever

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- possible. In the case of operations, minimize the number of people needed to operate a system.
- **Use a high-level system perspective.** Incorporating operational concepts for security, training, and maintenance into the system architecture avoids future costs. For example, analyzing problems or anomalies “at the factory” reduces the need for on-site maintenance engineers.
- **Use Web technology for system and operational documentation.** In many cases, this approach can be expanded to include product distribution.
- **Learn what technologies and processes your contractors are using for their commercial work.** Learn why

they are used and apply them to your acquisitions. Write your contracts so that contractors use these technologies and processes for their government work also.

For example, all of the major prime contractors in the space business use six sigma and lean manufacturing processes for their commercial work, but program offices generally ignore these methods. Set up a win-win approach. One such approach is to structure an operations contract in a way that allows the contractor to benefit financially from reducing the cost of operations. Suppose a contractor received an incentive award of 50 percent of the validated cost savings for the first year and residuals (at a lower percentage) for each of the following years of the contract. With this type of structure, everybody wins.

Applying These Lessons to COTS Satellite Ground Systems

Over the past decade, COTS systems (both hardware and software) for SOCs have become commercially available and provide a good example of many of these lessons learned. When COTS first became available, many government satellite program managers recognized the opportunity for substantial cost and risk savings, and hurried to embrace a COTS philosophy. Yet even today there are few government satellite programs using purely COTS solutions for ground operations. Why?

Initially, many programs with the vision of COTS failed to embrace the strategic perspective needed to achieve cultural change (Lesson 1). For example, many programs tried to acquire COTS software using their familiar DoD acquisition processes. They began acquisition by developing requirements completely independent of COTS capabilities. They did this to “prove” to their management that with a level playing field, COTS solutions would show significant cost and risk savings (Lesson 3). Of course, the exact opposite occurred. Custom requirements forced a custom solution; building that on top of COTS software was actually more expensive than writing it from scratch.

Programs that did succeed in fielding COTS systems often had problems with operations (Lesson 2). For example, many programs used their traditional model of software updates: heavily controlled, massive updates on yearly or longer intervals. By the time the program was ready for a software update, the underlying COTS might have gone through two, three, or even more releases. This forced the program to “leapfrog” updates, something that is usually poorly supported by the COTS vendor, and which introduced large amounts of change into the operational system.

In another example of Lesson 1, a prominent consolidation effort failed because the organization was not prepared to accept the cultural change that led to reduced staffing. Through consolidation and automation, the effort eliminated a number of operational positions within the program. But because the program manager had not properly prepared the organization for this cultural change, upper management refused to reduce staffing. And without the reduced staffing, the project’s cost savings were lost.

Later programs have been more successful by taking advantage of these lessons learned. First, they recognized that the success of COTS in the commercial sector had already proven the business case, freeing them to use new models of acquisition. Second, they embraced a strategic perspective and based system requirements on known COTS capabilities, improving the cost and risk savings. Third, they recognized the difficulty of changing operations, and spent additional effort to prepare management for cultural change, create new concepts of operations, and train operators accordingly.

Our discussions with vendors and companies offering satellite communications services echoed many of these same lessons:

- **Adapt your concept of operations to match the COTS products—not vice versa!** This is the major pitfall of COTS

use. If you insist on modifying COTS software to meet the way you have traditionally done business, the cost will rise and significant custom code will be required, obviating most cost savings.

- **Keep current—implement vendor releases.** In some situations, it is acceptable to “freeze” a system at a particular release. But most new systems are not static; they evolve for increased functionality, for interoperability with other systems, etc., and all these goals are more easily achieved with up-to-date software. It is also easier and more cost-effective to upgrade incrementally, rather than making a big “jump” caused by skipping releases.
- **In satellite operations, COTS command and control systems represent a savings, but still require substantial tailored code.**
- **Be wary of licensing fees and operational costs.** Many acquisitions focus on the purchase costs and ignore or place a low priority on continuing operational costs and licensing fees. However, systems often outlast expectations, compounding the impact of high operational costs and licensing fees.

The Aerospace Corporation investigated why acquisitions using COTS continue to have cost overruns and performance problems. The conclusions:

- **The acquisition organization (government or civilian) cannot control critical aspects of COTS.** You do not need to use all of the functional capabilities of COTS software packages. Using the underlying concepts of operations of vendor-supplied software eliminates integration problems.
- **A 1981 (!) Jet Propulsion Laboratory document on the Deep Space Program showed software reuse (including COTS) can produce substantial savings, but still requires about 12 percent of the purely custom development cost for test and integration.** Our experience in the years since then indicates that 12 percent is, if anything, a low estimate.
- **Whenever possible, create win-win situations—partnerships are useful.**

Vendors are not bad guys. They need to make a profit to survive, so work with the vendors. When vendors understand your problems, they may be able to resolve some of them in future releases.

- **Don’t modify the COTS.** If you need to change something to get the vendor software to work, first try to get the vendor to make the modification. If that is impossible, keep changes external and isolated from the commercial software.

Finally, as specified in a Mitre study, COTS savings are generally overstated; difficulty and limitations are generally understated. When using COTS, learn as you go; adjust plans accordingly.

Accept, Sell, Implement

The program manager with a new vision for his or her organization faces numerous challenges. In our experience, most of these are cultural and organizational, and the program manager who recognizes this, and plans for it from the inception of his or her vision, has a much greater chance of success.

- **Accept** that a new vision means cultural change.
- **Sell** the cultural change to executive management.
- **Implement** change with best practices.

As a closing note, it is interesting to observe that the lessons cited in this article are very similar to the lessons published in 1976 by the General Accounting Office (Lessons Learned About Acquiring Financial Management & Other Information Systems). Most of those lessons involved leadership, managing change, and using best practices. While technologies change from year to year, the management challenges of adopting and adapting to those changes remain fundamentally the same.

Vision is not a new *product*—it is a new *culture*.

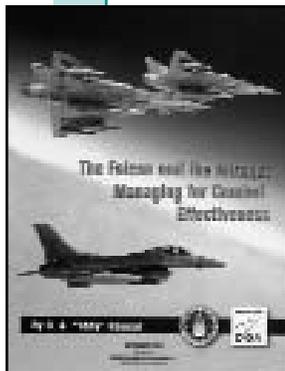
Editor’s Note: The authors welcome questions or comments on this article. Contact them at shere@aero.org and srt@aero.org.

DAU Guidebooks Available At No Cost to Government Employees

THE FALCON AND THE MIRAGE: MANAGING FOR COMBAT EFFECTIVENESS

Author: B.A. "Tony" Kausal
Publisher: DAU Press (November 2001)

Great differences exist between France and the United States in the ways each nation acquires new weapon systems. Some differences are cultural; others are a difference in organizational or management style. Much can be learned from recognizing those differences and gauging the results they have on meeting milestones and producing successful programs.



This guidebook examines the French Ministère de la Défense and the Délégation Générale pour l'Armement (DGA) and compares and contrasts each agency to the U.S. acquisition structure, and the ways each interacts with Defense industry. The author examines the System Program Offices of each country, and gives his insights based on years of experience with the U.S. Air Force and his recent assignment as part of a professional exchange between the Defense Acquisition University (where he was the Air Force Chair in the DAU Executive Institute), and the Centre des Hautes Études de l'Armement (CHEAr) in France.

Online

An online copy is available at <http://www.dau.mil/pubs/pubs-main.asp#Online>.

Printed Copy

To request a printed copy of *The Falcon and the Mirage: Managing for Combat Effectiveness*, choose one of three options: 1) Fax a written request to the DAU Publications Distribution Center at (703) 805-3726; 2) mail your request to Defense Acquisition University, Attn: AS-CI, 9820 Belvoir Road, Suite 3, Fort Belvoir VA 22060-5565; or 3) e-mail jeff.turner@dau.mil.

THE FOURTH ESTATE: THE IMPACT OF MASS COMMUNICATIONS ON DEFENSE SYSTEMS ACQUISITION DECISION MAKING

Author: Robert F. Delaney
Publisher: DAU Press (January 2002)

This guidebook examines Department of Defense Policy and gives an overview of the acquisition process in relation to Public Affairs and the Media. It delves into the historical background of the Press and Media in the United States and the rise of adversarial media-government relations. It also discusses the rise of mass communications in America and the impact of mass media on American culture and politics. It examines the media and the political process, including polls and lobbying. It also discusses media techniques and the future of information technology, including cyber warfare. It investigates national security, public policy, and public opinion using real-world examples from the White House, Congress, and the Pentagon. Finally, it discusses decision making in the Age of Instant Communications—how to relate to the Media and Program Managers, and how to include Media planning in Acquisition decisions.



Online

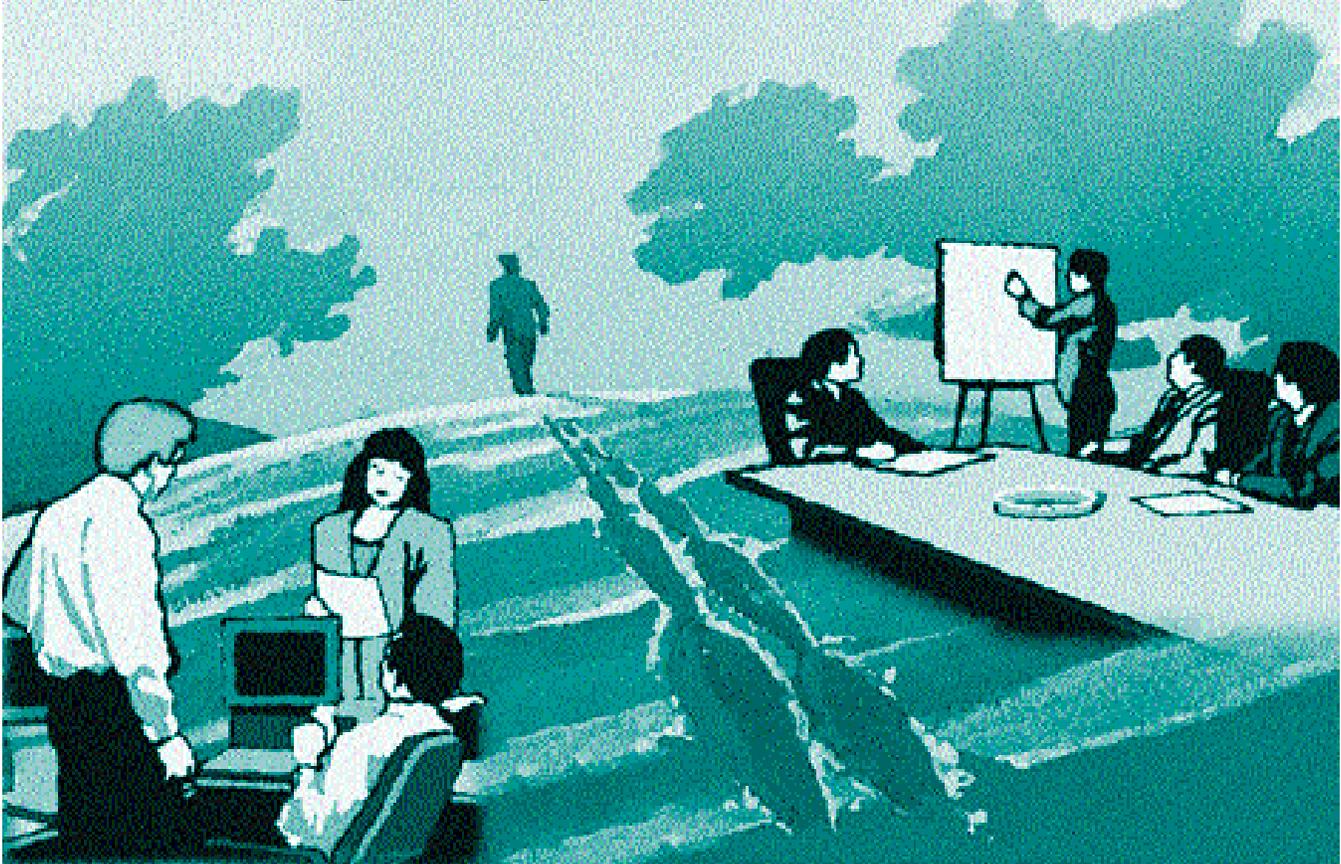
An online copy will soon be available at <http://www.dau.mil/pubs/pubs-main.asp#Online>.

Printed Copy

To request a printed copy of *The Fourth Estate: The Impact of Mass Communications on Defense Systems Acquisition Decision Making*, choose one of three options: 1) Fax a written request to the DAU Publications Distribution Center at (703) 805-3726; 2) mail your request to Defense Acquisition University, Attn: AS-CI, 9820 Belvoir Road, Suite 3, Fort Belvoir VA 22060-5565; or 3) e-mail jeff.turner@dau.mil.

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Surfing the Net

Department of Defense

Under Secretary of Defense (Acquisition, Technology and Logistics) (USD(AT&L))

<http://www.acq.osd.mil/>

ACQWeb offers a library of USD(AT&L) documents, a means to view streaming videos, and jump points to many other valuable sites.

Director, Defense Procurement and Acquisition Policy (DPAP)

<http://www.acq.osd.mil/dpap>

Procurement and Acquisition Policy news and events; reference library; DPAP organizational breakout; acquisition education and training policy and guidance.

DoD Inspector General

<http://www.dodig.osd.mil/pubs/index.html>

Search for audit and evaluation reports, Inspector General testimony, and planned and ongoing audit projects of interest to the acquisition community.

Deputy Director, Systems Engineering, USD (AT&L/IO/SE)

<http://www.acq.osd.mil/io/se/index.htm>

Systems engineering mission; Defense Acquisition Workforce Improvement Act information, training, and related sites; information on key areas of systems engineering responsibility.

Defense Acquisition Deskbook

<http://deskbook.dau.mil>

Automated acquisition reference tool covering mandatory and discretionary practices.

Defense Acquisition History (DAH) Project

<http://www.army.mil/cmh-pg/acquisition/acqhome.htm>

The DAH Project is a multi-year program to produce a detailed history of defense acquisition since 1947, to be published in six volumes. The site features a quarterly online newsletter, project status announcements, acquisition history links, and contact information.

Defense Acquisition University (DAU)

<http://www.dau.mil>

DAU Course Catalog, *Program Manager* magazine and *Acquisition Review Quarterly* journal; course schedule; policy documents; guidebooks; and training and education news for the Defense Acquisition Workforce.

Defense Acquisition University Distance Learning Courses

<https://dau.mil/registrar/apply.asp>

Take DAU courses online at your desk, at home, at your convenience!

Army Acquisition Corps (AAC)

<http://asc.rdaisa.army.mil>

News; policy; publications; personnel demo; contacts; training opportunities.

Army Acquisition

<http://acqnet.saalt.army.mil>

A-MART; documents library; training and business opportunities; past performance; paperless contracting; labor rates.

Navy Acquisition Reform

<http://www.ar.navy.mil>

Acquisition policy and guidance; World-class Practices; Acquisition Center of Excellence; training opportunities.

Naval Sea Systems Command

<http://www.navsea.navy.mil>

Total Ownership Cost (TOC); documentation and policy; Reduction Plan; Implementation Timeline; TOC reporting templates; Frequently Asked Questions.

Navy Acquisition and Business Management

<http://www.abm.rda.hq.navy.mil>

Policy documents; training opportunities; guides on areas such as risk management, acquisition environmental issues, past performance, and more; news and assistance for the Standardized Procurement System (SPS) community; notices of upcoming events.

Navy Best Manufacturing Practices Center of Excellence

<http://www.bmpcoe.org>

A national resource to identify and share best manufacturing and business practices being used throughout industry, government, and academia.

Space and Naval Warfare Systems Command (SPAWAR)

<https://e-commerce.spawar.navy.mil>

Your source for SPAWAR business opportunities, acquisition news, solicitations, and small business information.

Joint Interoperability Test Command (JITC)

<http://jitic.fhu.disa.mil>

Policies and procedures for interoperability certification. Access to lessons learned; link for requesting support.

Air Force (Acquisition)

<http://www.safaq.hq.af.mil/>

Policy; career development and training opportunities; reducing TOC; library; links.

Air Force Materiel Command (AFMC) Contracting Laboratory's FAR Site

<http://farsite.hill.af.mil/>

FAR search tool; *Commerce Business Daily* Announcements (CBDNet); Federal Register; Electronic Forms Library.



Defense Systems Management College (DSMC)

<http://www.dau.mil>

DSMC educational products and services; course schedules; job opportunities.

Defense Advanced Research Projects Agency (DARPA)

<http://www.darpa.mil>

News releases; current solicitations; "Doing Business with DARPA."

Defense Information Systems Agency (DISA)

<http://www.disa.mil>

Structure and mission of DISA; Defense Information System Network; Defense Message System; Global Command and Control System; much more!

National Imagery and Mapping Agency

<http://www.nima.mil>

Imagery; maps and geodata; Freedom of Information Act resources; publications.

Defense Modeling and Simulation Office (DMSO)

<http://www.dmsomil>

DoD Modeling and Simulation Master Plan; document library; events; services.

Defense Technical Information Center (DTIC)

<http://www.dtic.mil/>

Technical reports; products and services; registration with DTIC; special programs; acronyms; DTIC FAQs.

Defense Electronic Business Program Office (DEBPO)

<http://www.defenselink.mil/acq/ebusiness/>

Policy; newsletters; Central Contractor Registration; Assistance Centers; DoD EC Partners.

Open Systems Joint Task Force

<http://www.acq.osd.mil/osjtf>

Open Systems education and training opportunities; studies and assessments; projects, initiatives and plans; reference library.

Government-Industry Data Exchange Program (GIDEP)

<http://www.gidep.org>

Federally funded co-op of government-industry participants, providing an electronic forum to exchange technical information essential to research, design, development, production, and operational phases of the life cycle of systems, facilities, and equipment.

Acquisition & Logistics Excellence

An Internet Listing Tailored to the Professional Acquisition Workforce

Surfing the Net



Federal Civilian Agencies

Acquisition Network (ACQNET)

<http://www.arnet.gov/>

Virtual library; federal acquisition and procurement opportunities; best practices; electronic forums; business opportunities; acquisition training; Excluded Parties List.

Committee for Purchase from People Who are Blind or Severely Disabled

<http://www.jwod.gov>

Provides information and guidance to federal customers on the requirements of the Javits-Wagner-O'Day (JWOD) Act.

Federal Acquisition Institute (FAI)

<http://www.faionline.com>

Virtual campus for learning opportunities as well as information access and performance support.

Federal Acquisition Jump Station

<http://nais.nasa.gov/fedproc/home.html>

Procurement and acquisition servers by contracting activity; CBDNet; Reference Library.

Federal Aviation Administration (FAA)

<http://www.asu.faa.gov>

Online policy and guidance for all aspects of the acquisition process.

General Accounting Office (GAO)

<http://www.gao.gov>

Access to GAO reports, policy and guidance, and FAQs.

General Services Administration (GSA)

<http://www.gsa.gov>

Online shopping for commercial items to support government interests.

Library of Congress

<http://www.loc.gov>

Research services; Congress at Work; Copyright Office; FAQs.

National Technical Information Service (NTIS)

<http://www.ntis.gov>

Online service for purchasing technical reports, computer products, videotapes, audiocassettes, and more!

Small Business Administration (SBA)

<http://www.SBAonline.SBA.gov>

Communications network for small businesses.

U.S. Coast Guard

<http://www.uscg.mil>

News and current events; services; points of contact; FAQs.

U.S. Department of Transportation MARITIME Administration

http://www.marad.dot.gov/offices/cargo_pref.html

Provides information and guidance on the requirements for shipping cargo on U.S. flag vessels.

Topical Listings

Commerce Business Daily

<http://www.govcon.com/>

Access to current and back issues with search capabilities; business opportunities; interactive yellow pages.

DoD Specifications and Standards Home Page

<http://www.dsp.dla.mil>

All about DoD standardization; key Points of Contact; FAQs; Military Specifications and Standards Reform; newsletters; training; nongovernment standards; links to related sites.

Earned Value Management

<http://www.acq.osd.mil/pm>

Implementation of Earned Value Management; latest policy changes; standards; international developments; active notebook.

Fedworld Information

<http://www.fedworld.gov>

Comprehensive central access point for searching, locating, ordering, and acquiring government and business information.

GSA Federal Supply Service

<http://pub.fss.gsa.gov>

The No. 1 resource for the latest services and products industry has to offer.

MANPRINT (Manpower and Personnel Integration)

<http://www.MANPRINT.army.mil>

Points of contact for program managers; relevant regulations; policy letters from the Army Acquisition Executive; as well as briefings on the MANPRINT program.

Program Management Community of Practice (PMCoP)

<http://www.pmcop.dau.mil>

Includes risk management, contracting, system engineering, total ownership cost (TOC) policies, procedures, tools, references, publications, Web links, and lessons learned.

Industry and Professional Organizations

Association of Old Crows (AOC)

<http://www.crows.org>

Association news; conventions, conferences and courses; *Journal of Electronic Defense* magazine.

DAU Alumni Association

<http://www.dauaa.org>

Acquisition tools and resources; government and related links; career opportunities; member forums.

Computer Assisted Technology Transfer (CATT) Program

<http://catt.bus.okstate.edu>

Collaborative effort between government, industry, and academia. Learn about CATT and how to participate.

Electronic Industries Alliance (EIA)

<http://www.eia.org>

Government Relations Department; includes links to issue councils; market research assistance.

International Society of Logistics

<http://www.sole.org/>

Online desk references that link to logistics problem-solving advice; Certified Professional Logistician certification.

National Contract Management Association (NCMA)

<http://www.ncmahq.org>

"What's New in Contracting?"; educational products catalog; career center.

National Defense Industrial Association (NDIA)

<http://www.ndia.org>

Association news; events; government policy; *National Defense* magazine.

Project Management Institute

<http://www.pmi.org>

Program management publications, information resources, professional practices, and career certification.

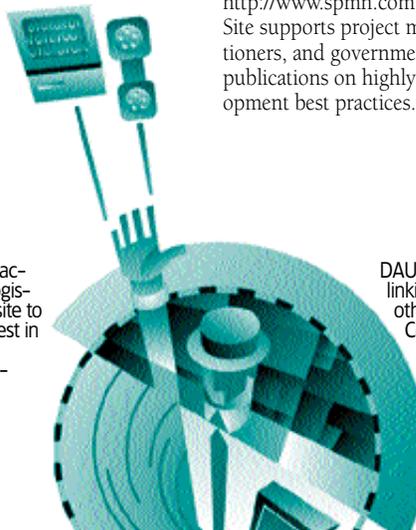
Software Program Managers Network

<http://www.spmn.com>

Site supports project managers, software practitioners, and government contractors. Contains publications on highly effective software development best practices.

If you would like to add your acquisition or acquisition and logistics excellence-related Web site to this list, please put your request in writing and fax it to Sylwia Gasiorek-Nelson, (703) 805-2917.

DAU encourages the reciprocal linking of its Home Page to other interested agencies. Contact the DAU Webmaster at: webmaster@dau.mil.



Program Manager Writer's Guidelines in Brief

(<http://www.dau.mil/pubs/pm/articles.asp>)

Purpose

The purpose of *Program Manager* Magazine is to instruct members of the DoD Acquisition, Technology & Logistics (AT&L) Workforce and Defense Industry on policies, trends, legislation, senior leadership changes, events, and current thinking affecting program management and defense systems acquisition, and to disseminate other information pertinent to the professional development and education of the DoD Acquisition Workforce.

Subject Matter

Subjects may include, but are not restricted to, all aspects of program management; professional and educational development of DoD's AT&L Workforce; acquisition and logistics excellence; Defense industrial base; research and development; test and evaluation; modeling and simulation; commercial best business practices; and interviews with Government-Industry Defense executives.

Program Manager is not a forum for academic papers, fact sheets, technical papers, or white papers (these are typically recognized by their structured packaging, e.g., Introduction, Background, Discussion, Methodology, Recommendations, Conclusions). Those papers are more suited for DAU's journal, *Acquisition Review Quarterly*. *Program Manager* Magazine publishes, for the most part, feature stories that include real people and events. Stories that appeal to our readers—who are senior military personnel, civilians, and defense industry professionals in the program management/acquisition business—are those taken from real-world experiences vs. pages of researched information.

Good writing sounds like comfortable conversation. Write naturally and avoid stiltedness. Except for a rare change of pace, most sentences should be 25 words or less, and paragraphs should be six sentences. Vary your syntax. Avoid falling into the trap of writing one declarative sentence after another. Package your article with liberal use of subheads.

Length of Articles

Program Manager is flexible regarding length, but articles most likely to be published are generally 2,000–3,000 words or about 10 double-spaced pages, each page having a 1-inch border on all sides. However, do not be constrained by length requirements; tell your story in the most direct way, regardless of length. Do not submit articles in a layout format, nor should articles include any footnotes, endnotes, or references. *Be sure to define all acronyms.*

Photos and Illustrations

Articles may include figures, charts, and photographs. They must, however, be in a separate file from the article. Photos must be black and white or color. *Program Manager* does not guarantee the return of photographs. Include brief, numbered captions keyed to the photographs. Place a cor-

responding number on the lower left corner, reverse side of the photographs. Also, be sure to include the *source* of the photograph. *Program Manager* publishes no photos from outside the Department of Defense without express permission. Photocopies of photographs are not acceptable.

With the increase in digital media capabilities, authors can now provide digital files of photos/illustrations. (Our author guidelines at <http://www.dau.mil/pubs/pm/articles.asp> contain complete instructions on transferring these files.) Note that they must meet the following publication standards set for *Program Manager*: color and grayscale (if possible); EPS files generated from Illustrator (preferred) or Corel Draw (if in another format, provide program format as well as EPS file); TIFF files with a resolution of 300 pixels per inch; or other files in original program format (i.e., Powerpoint).

Biographical Sketch

Include a short biographical sketch of the author(s)—about 25 words—including current position and educational background.

Clearance

All articles written by authors employed by or on contract with the U.S. Government must be cleared by the author's public affairs or security office prior to submission. In addition, each author must certify that the article is a "Work of the U.S. Government." This form is found at the end of the PM Author Guidance. Click on "Copyright Forms" and print the last page only, sign, and submit with the article. Since all articles appearing in *Program Manager* are in the public domain and posted to the DAU Web site, no copyrighted articles will be accepted. This is in keeping with DAU's policy of widest dissemination of its published products.

Submission Dates

Issue	Author's Deadline
January–February	1 December
March–April	1 February
May–June	1 April
July–August	1 June
September–October	1 August
November–December	1 October

Submission Procedures

Articles (in MS Word) may be submitted via e-mail to collie.johnson@dau.mil or via U.S. mail to: DAU PRESS, ATTN C. JOHNSON, 9820 BELVOIR RD, SUITE 3, FORT BELVOIR VA 22060-5565. For photos/illustrations accompanying your article, send us the original photos or follow the guidance under "Photos and Illustrations"—opposite column. All submissions must include the author's name, mailing address, office phone number (DSN and commercial), and fax number.



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