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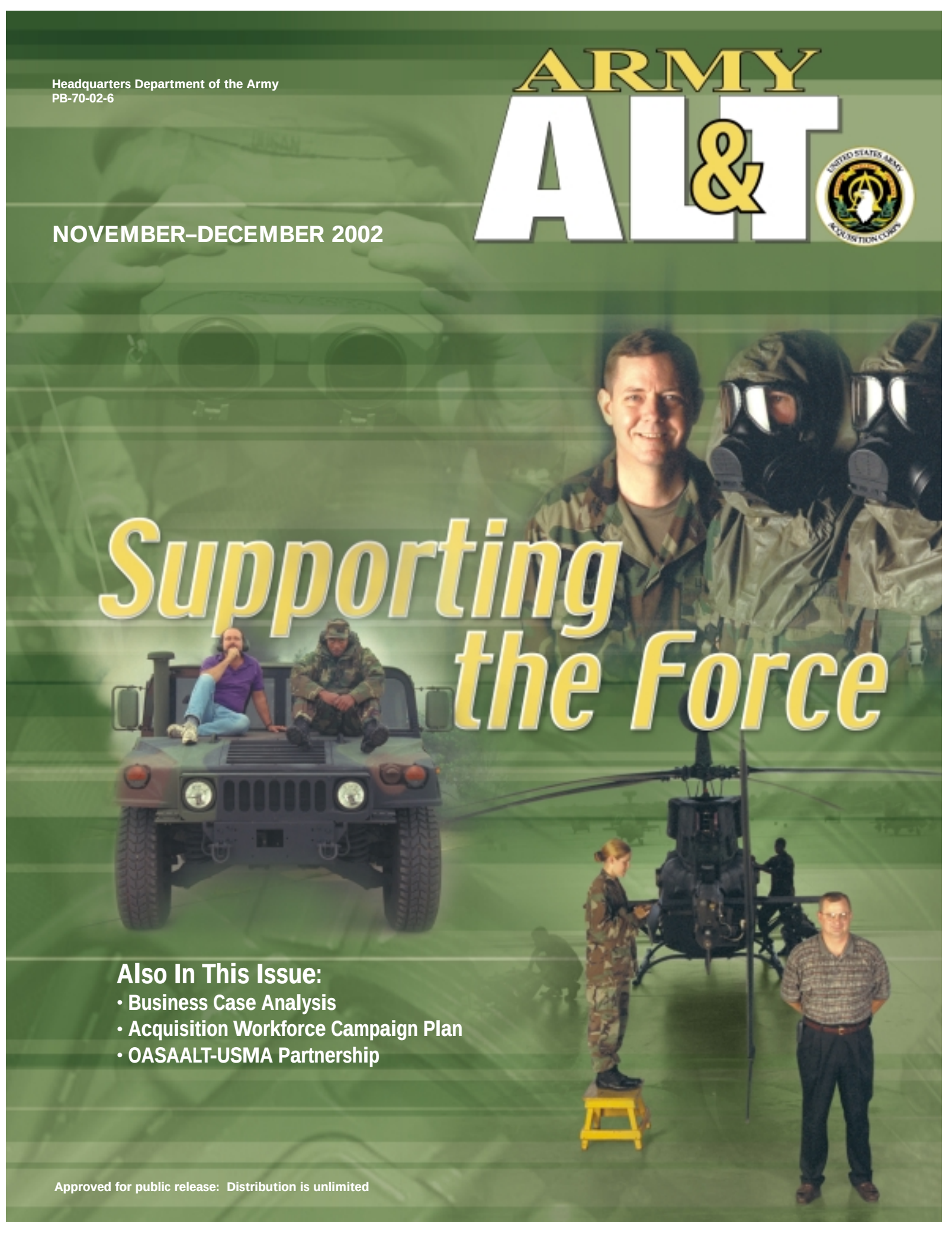

Supporting the Force

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- OASAALT-USMA Partnership

FROM THE ARMY ACQUISITION EXECUTIVE

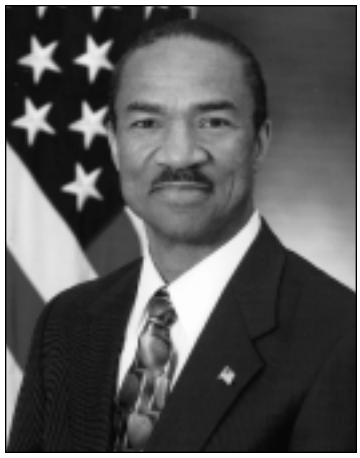
Supporting The Soldier In Afghanistan

Operation Enduring Freedom is demonstrating once again that no mission can be accomplished successfully without the commitment of ground troops. I am reminded of what historian T.R. Fehrenbach wrote: ". . . you may fly over a land forever; you may bomb it, atomize it, pulverize it and wipe it clean of life—but if you desire to defend it, protect it, and keep it for civilization; you must do this on the ground, the way the Roman legions did, by putting your young men into the mud."

In addition, Fehrenbach wrote that the most fundamental measure of how effectively we invest our dollars in developing leaders, in training our soldiers, and in equipping them is whether those investments "permit [our] ground troops to live in battle." From all reports out of Afghanistan-reports by soldiers themselves—we have invested wisely.

Our soldiers are fighting today with systems designed to win the Cold War. These systems were not designed to fight this fight, but they are performing superbly. Army Special Operations Forces believe that Afghanistan's high mountains and rough terrain could have thwarted several missions without the specially configured Chinooks (MH-47Es). Missions that lasted up to 15 hours were conducted at altitudes above 16,000 feet, forcing crews, on occasion, to use supplemental oxygen. Crews insisted that early missions that began in Uzbekistan, about 100 miles from the Afghanistan border, could not have been flown by any other helicopter. One obstacle was the most challenging terrain in the world. While other helicopters could traverse the mountains, they could not also carry an operationally useful load. The MH-47Es succeeded because their extended fuel tanks allowed more than 4 hours of flying, enabling them to get across the mountain range before they needed to refuel.

Apaches consistently receive high praise from the pilots who fly them, but more importantly, from the ground soldiers who benefit from their strike power. On March 2, during the opening moments of Operation Anaconda, U.S. troops on the battlefield were under attack, and Apache pilot Keith Hurley put his sight on eight al Qaeda fighters manning a mortar pit and let loose a barrage of 70mm rockets. As he swung around from that engagement, a rocket-propelled grenade hit the missile launcher on the left side of his aircraft and a bullet ripped through his cockpit. He would soon find out whether the Apache could fly with oil pouring out of its transmission. It did. In a telephone interview from Kandahar, Hurley said, "There are 13 [al Qaeda] guys who are not here anymore who can attest to the lethality of that aircraft. And there are some other bad guys, if they are still alive, saying 'I



hit that thing with an RPG and it flew away'." The Apache aircraft and pilots involved in that mission saved our troops for a critical couple of hours and got the damaged aircraft back to base in 26 minutes. The pilots were always told that an Apache could fly for 30 minutes without oil. Now, we know it's true. That's another great Apache war story. It's a tough survivor, and a great war hero.

We will not put our soldiers on point for our Nation unprepared. About 2,000 troops saw action in Operation Anaconda, but only 76 were wounded. "Many of those 76 suffered wounds to their extremities, not to their vital organs," said MAJ, MC, Brian Burlingame, Commander of the 274th Forward Surgical Team (Airborne). As one soldier said, "Our body armor saved the torso areas so nobody sustained bad injuries around the chest or stomach. Most injuries were to the legs and arms." Recently upgraded body armor protects soldiers' torsos from more serious wounds. One 10th Mountain trooper was shot twice in the chest and lived to talk about it. Unlike the old flak vests, which only protected against fragments, the new vest incorporates bulletproof plates that can stop 7.62mm rounds. Some soldiers' helmets also had dents from shrapnel or bullets that would likely have killed them had they not been wearing them.

The campaign in Afghanistan has been one for the record books, as GEN Richard B. Myers, the Chairman of the Joint Chiefs of Staff, recently said. "It included the deepest amphibious operation in our Marine Corps history—over 400 miles into hostile territory. It included the highest elevation that our soldiers fought a pitched battle—at 10,000 feet above sea level. It included the longest combat sortie on record for our Air Force—44 hours in length. Most significant of all, it entailed the fewest war-combatant injuries and the least collateral damage of any major military operation in history."

In closing, the most significant support is that of the American people for the work being done by our men and women in uniform. 1LT Joe Claburn of the 101st Airborne Division summed it up in an interview last March, "We really do appreciate the American support that we soldiers have gotten over here. As you know, the infantryman lives in the mud, sleeps in the mud—and the weather here is very terrible—so every bit of support we get from the American people really does mean a lot. My unit personally has missed Thanksgiving, Christmas, New Year's, tons of birthdays, and anniversaries, and the support of the American people tremendously does a lot to help us out here."

Let's continue to work hard and work together to support the force in every way we can.

Claude M. Bolton Jr.

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FEATURES

DEPARTMENTS

COVER

With the current demands of the ongoing war on terrorism and the need to meet other soldier requirements, the Army acquisition community has intensified its efforts to support the force wherever necessary.

Supporting The Force

OASAALT-USMA Working Together . . .

PARTNERSHIP FOR RESEARCH AND STUDIES

LTG John S. Caldwell Jr. and
BG Daniel J. Kaufman

Introduction

After several years of crawling, then walking, a great partnership has been forged and is ready to run toward a very worthy goal. To set the stage for discussion, we will review who the partners are, their missions, and what the partners are commissioned to accomplish.

The Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (OASAALT)/Army Acquisition Executive (AAE) is responsible for the Army's entire acquisition program. This mission encompasses all aspects of the process—from alpha through omega.

The U.S. Military Academy (USMA), the other partner, is one of the Army's essential sources of commissioned officers (the uniformed leaders and managers of the Army). Its mission is to educate, train, and inspire the Corps of Cadets so that each graduate is a commissioned leader committed to the values of duty, honor, and country; is provided professional growth opportunities throughout his or her career as an officer in the U.S. Army; and provides a lifetime of selfless service to the Nation.

At first glance, it may seem that these critical missions, each essential to the Army, are somewhat independent. However, evolving circumstances at USMA have created conditions that make them mutually supporting and synergistic (even symbiotic).

Background

By way of preamble, it is important to note that few challenges facing the Army are more daunting than those of acquisition. It is resource-intensive, scientific, technical, legalistic, political, rapidly changing, and enormous in scope. Acquisition is second only to soldiers in terms of importance to the Army's mission. For the acquisition process to be successful, the myriad problems its managers encounter must be solved through ongoing research and study in laboratories, centers, and commands throughout the Army, and USMA is in a good position to help.

The academy has a continuing tradition of providing valuable research for the Army. These efforts also support the academy's mission by enhancing the educational experience for cadets and by supporting faculty professional development. Currently, the faculty consists of about 15 percent field grade officers who have doctoral degrees, and approximately 60 percent senior captains and junior majors holding master's degrees. The remaining faculty consists of civilian professors who are doctoral-level professionals in their various fields. Adding to the population of those who can contribute to the partnership effort are officers in advanced degree programs.

Each year, to sustain the military faculty, the Army selects officers to pursue graduate degrees at the Nation's finest universities. As students, these officers must prepare theses or dissertations attendant to graduation and follow-on assignment to the USMA faculty. Where appropriate, their research can support the AAE mission. Further, it can then be applied to subsequent study with cadets when the officer joins an academic department.

Discussion

The present partnership between OASAALT and USMA had its genesis in the early 1990s in the productive relationship between USMA's Department of Systems Engineering and the Program Manager (PM), Soldier Systems. More recently, at the request of the Program Executive Officer (PEO), Soldier, many other USMA departments (including the Department of Military Instruction and the Department of Physical Education) began conducting research and studies focused on the Land Warrior Program. In early September 2001, the ASAALT Military Deputy (MILDEP) requested that the academy consider opening the research and studies opportunity to others in the acquisition community. The academy concurred, and a Memorandum Of Agreement (MOA) was prepared to document the relationship.

As we progress through academic year 02-03, the present research and studies program includes 10 departments and about 20 projects. More than 24 military and civilian faculty members, several commissioned graduate students, and many cadets accomplish this work. This year's study sponsors include PEO, Soldier; PM, Abrams and PM, Bradley; the Army Operational Test Command; the Army Research Laboratory; the Deputy Under Secretary of the Army (Operations Research); the Army Research Institute; and the Army Simulation, Training and Instrumentation Command.

Topics

Examples of research and study topics span a broad spectrum, including modeling and simulation for decision support and training, optimization of security and storage for the soldier tactical mission system, soldier load configuration and squad lethality, land navigation and satellite imagery, protection from pathogens and chemical munitions, and power (source, sustainment, and management).

Past and ongoing studies have generated findings such as the value of intrasquad communications, optimization of security and storage for the Land Warrior System, methods for recharging

The soldier remains our key to victory-the OASAALT-USMA Research and Studies Partnership will enhance our combat effectiveness.

batteries for the Land Warrior, insights concerning land navigation, and the challenges of simulating infantry operations at the soldier level of detail.

Purpose And Goals

The purpose of the OASAALT-USMA partnership is to provide the Army acquisition community interdisciplinary research and study conducted by commissioned officers, civilian faculty, and cadets to support both the mission of the academy and the AAE.

The goals of the partnership are to:

- Capitalize on USMA's Army field expertise, education level, and multidisciplinary organization to address acquisition research challenges;
- Provide developmental experience for commissioned and civilian faculty and cadets through research and study directed at actual Army acquisition issues; and
- Focus the research (dissertation and thesis) work of officers in advanced degree programs in anticipation of their follow-on assignments.

To succeed, the partnership effort must prove its worth by emphasizing interdepartmental and multiagency cooperation, and by providing timely, useful findings and recommendations at relatively low cost.

Process

The process for starting and sustaining research and study within the partnership is straightforward and easy. Further, the AAE and USMA have agreed that an Acquisition Systems Center of Excellence within the Department of Systems Engineering will manage the partnership. Study sponsors and the departments will work closely and cooperatively as the partnership moves forward. The OASAALT partnership administrator is PEO, Soldier, and the administrative duties for the academy rest within the Department of Systems Engineering. The process is coordinated and facilitated by the Acquisition Systems Center of Excellence.

A very attractive feature of this relationship is its simplicity. Study questions are solicited from potential sponsors and received by the center during the early fall of each year. The academic departments at USMA then formulate study proposals. Once the sponsors and departments agree on what will be done, the department prepares detailed study plans that may begin with cadet internships during the summer months. Finally, full research and study begins in Term 1 of the ensuing academic year (mid-August) and continues through May. The cycle is continuous and repeats itself in this manner.

In-process reviews are conducted at least quarterly, and reports, briefings, and presentations are prepared and delivered as appropriate. Projects may be multiyear or annual, depending on the complexity of the topic. Similarly, officers in graduate programs are "recruited" by the center, with the support of their prospective departments and the approbation of the Army sponsors.

Conclusion

The Partnership for Research and Studies between the OASAALT and USMA appears to be a win-win opportunity for both signatories and the Army at large. With time and demonstrated value, it is expected to grow and bring real solutions to the myriad challenges that confront the Army acquisition community as it accomplishes its vital mission.

For further information regarding the partnership, contact COL Patrick A. Toffler (USA, Ret.), the Director of the Partnership's Acquisition Systems Development Center. He is responsible to the AAE and USMA to operate the partnership per the MOA and standard operating procedures that establish the relationship and govern its operation. Toffler can be contacted at (845) 938-8169, (914) 715-5693, or **Patrick.Toffler@us.army.mil**.

LTG JOHN S. CALDWELL JR. is the ASAALT MILDEP and the Director, Army Acquisition Corps. He has a bachelor's degree from the U.S. Military Academy and an M.S. in mechanical engineering from the Georgia Institute of Technology. His military experience includes a wide variety of armor assignments and key management positions within the acquisition community.

BG DANIEL J. KAUFMAN is the Dean of the Academic Board at the U.S. Military Academy. As such, he is a key member of the academy's leader team (along with the Superintendent, the Commandant of Cadets, the department heads, and other members of the academic board). He is also the Director of the Academic Program. Kaufman has a bachelor's degree from the U.S. Military Academy and has doctoral degrees in international relations from Harvard University and in political science from the Massachusetts Institute of Technology.

Supporting The Force

Force Provider . . .

SUPPORTING THE FORCE IN AFGHANISTAN AND CENTRAL ASIA

LTC Lawrence S. Silas, Michael Gallagher, and Michael J. Hope

Introduction

"*Thanks, Force Provider,*" said MSG Kim Almandi, Operations Noncommissioned Officer in Charge for the 507th Corps Support Group. She expressed this sentiment to a Product Manager, Force Sustainment Systems (PM, FSS) team that traveled to Uzbekistan and Kyrgyzstan in March 2002 to ensure that Force Provider (FP) systems deployed to support Operation Enduring Freedom were providing quality support to U.S. forces prosecuting the war on terrorism.

FP is a readily deployable, containerized, and pre-packed base camp developed by the Army between 1992 and 1994. Using modern, environmentally controlled configurations of tents and containerized systems, each FP module can support approximately 550 soldiers. Offering quality-of-life amenities not normally found in the field, it has been supporting soldiers serving around the world since July 1994, when it first deployed to Grand Turks Island during the preparation for military intervention in Haiti. Since then, FP has served in military operations in Cuba, the Balkans, Guatemala, and Honduras.

The roots of FP can be traced to the Saudi Arabian desert during Operation Desert Shield. During the prewar buildup, there was a noticeable disparity between U.S. Army and U.S. Air Force (USAF) living conditions. USAF personnel lived in air-conditioned TEMPER (tent, extendable, modular, personal) accommodations, had onsite personal laundry services, quality food-service facilities, hot showers, and flushing latrines. Meanwhile, the Army lived in general-purpose tents developed during the 1950s, which had no windows, and used makeshift showers and slit-trench latrines. The Army and USAF facilities were often collocated, and the juxtaposition of living quality was not lost on Army leadership.

Thus, in July 1991, then Army Chief of Staff GEN Gordon R. Sullivan directed the Army to develop a system to take care of soldiers in the field. Using something akin to today's "spiral development," the FP team devised a DOD award-winning approach that leveraged the USAF's experience and equipment and tailored it to Army doctrine. Moreover, it accelerated production by 2 years using nondevelopmental items and existing Army pre-positioned stock and assembled these items into FP modules.

Nearly 8 years after its first deployment, FP is helping to project forces farther into the battle than ever before. In November 2001, the Army began deploying FP modules in Uzbekistan to project and support coalition forces. Today, 13 FP modules are set up alongside comparable USAF facilities, serving multiple roles as forward operating base camps, intermediate staging bases, and for in-theater reception. Nearly 8,000 soldiers are being housed between the camps, and more deployments are in progress.

Centralized Management

FP is managed by PM, FSS, an element of Project Manager, Force Projection within the Program Executive Office for Combat Support and Combat Service Support (PEO, CS&CSS). As the system life-cycle manager, PM, FSS continually seeks new ways to support unified commands with better equipment that can arrive and be operational faster than ever before.

FP is an important component of how PM, FSS supports Project Manager, Force Projection's vision of being the preferred provider of sys-

tems that move and sustain today's transforming Army. With its systems that can be rapidly deployed by air, sea, or land, and then rapidly employed once delivered in-theater, FP improves the Army's combat capability by providing a strategic force-projection presence while providing soldiers a greatly improved quality of life. These improved conditions boost morale, which in turn allows warfighters to be better prepared to execute their missions. This vision has played itself out well in Operation Enduring Freedom.

Bunk tent

When deployed, FP uses and is dependent on a multitude of CS&CSS equipment, to include power generation, water purification and delivery systems, materiel handling equipment, tactical vehicles, and Army watercraft. The recent stand-up of PEO, CS&CSS aligned the product managers of the above systems under a single umbrella that allows for close communication, collaboration, and synchronization of efforts resulting in a better end product that meets the Army's requirements.

Tent Cities

Among the wide variety of rapidly deployable systems that make up FP are air-conditioned or heated tents, hot showers, a full-service kitchen, laundry service, and flushing toilets. Other amenities include recreation such as basketball, table tennis, and satellite television. Each module also offers a chapel and contains space for a small medical facility for use by the visiting unit's staff. Currently, 32 of 36 planned modules exist, more than half of which are currently deployed.

FP is maintained as an Operational Project Stock (OPPROJ) item, managed by the Army Materiel Command. As an OPPROJ item, FP can only be authorized for release to the commander of a unified command. The Army uses a single Active component company headquarters (488th Quartermaster (QM) Co.) and one platoon (488th QM PLT) to support FP missions. Five additional Reserve platoons are war-traced to the 488th to provide a full-strength company. At full strength, one company can support six FP modules. Another five FP companies exist in the Army Reserve as Type B units, meaning they must be supplemented with contractor or equivalent Army military occupational specialty personnel to support any modules. The units train at the Force Provider Training and Test Facility, Fort Polk, LA. Located there is a single FP module that serves as an active staging base for Army units entering and departing their Joint Readiness Training Center rotations, thus providing real-world training scenarios for units.

Supporting The Force

After September 11th, 2001, the Army was called on to work jointly with the USAF and the U.S. Special Operations Command (USSOCOM) to provide CS and CSS to operations in and around Afghanistan.

In October 2001, the Army began to deploy, set up, and operate OCONUS-based FP modules in support of Operation Enduring Freedom. In November 2001, four FP modules were in transit to the theater of operations. By the end of December 2001, these modules were established and provided an early-entry capability that served as the first forward base camp facility to directly support air and ground combat operations inside Afghanistan.

The FP modules were employed at two sites. Site 1, in Uzbekistan, was operated by the Army and provided support to USSOCOM, Army, and coalition forces. Site 2, in Kyrgyzstan, was set up and operated by USAF

Tent layout

personnel strictly for airfield operations. In May 2002, five additional modules were deployed into Afghanistan. By June 2002, these were set up near Kandahar, housing soldiers directly engaged in continuing combat operations inside Afghanistan.

FP has proven to be extremely flexible given the changing conditions. Originally conceived as a rear-area rest and refit facility, it is now a relevant combat multiplier being used as a forward-deployed system that increases combat capabilities by providing superior living conditions beyond that ever experienced by soldiers. Clearly, the ongoing combat operations are extremely demanding, and the Army's ability to bring superior living conditions to the soldier (versus bringing the soldier to the facilities) improves recovery time and makes for a more effective combat soldier.

Foresight Pays Off

From lessons learned in earlier deployments to Haiti, Cuba, and Bosnia, the PM routinely sent staff engineers and technicians to assist the troops on the ground in deployment and initial operation of the camps. Recognizing that a dedicated team would be more beneficial to supporting the ever-increasing frequency of deployments, the PM put plans in place during early 2001 to ensure that a team of specialists was hired, trained, and ready to deploy the next time FP was called forward. Nobody envisioned FP would be called into action so rapidly. However, the foresight by PM, FSS is paying great dividends following post-September 11 activities.

PM, FSS initiated a technical assistance team (TAT) in late 2001, just in time for deployment to Central Asia, where the team toiled alongside Army and USAF personnel to quickly set up both sites. The PM, FSS TAT will continue to coordinate with gaining units to collectively develop a plan for setting up, operating, and maintaining FP during Operation Enduring Freedom. An additional benefit of the PM, FSS TAT is that it allows lessons learned to be carried from one deployment to the next, continually improving the process and, therefore, the support to the soldiers.

Weight room tent

Future Focus

The PM, FSS vision is to lead the Army's transformation efforts in the force sustainment arena, and FP will play a vital role in achieving that vision. The FP team will continue to enhance and sustain the warfighter's capability by reducing its logistics footprint while providing effective and efficient support systems.

Conclusion

From the cold winter temperatures of Kyrgyzstan to the more than 120-degree temperatures in Kandahar, Force Provider—and its wide-ranging support from PEO, CS&CSS equipment—has been supporting the force at unprecedented levels. Recently, the 82nd Airborne Division moved into the FP facilities near Kandahar. According to a July 28, 2002, report in the *Stars and Stripes European Edition*, the 82nd's soldiers expected to encounter poor living conditions; however, they were surprised by the high quality of life FP offered and the ability it gave them to conduct their missions at the highest level. Could anything else better describe the impact that PEO, CS&CSS, and FP has on the war?

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THE MID-RANGE MUNITION BLOCK I FCS LETHALITY

Supporting The Force

LTC Dave Rice

Introduction

Although many decisions remain in the initial stages of the Future Combat Systems (FCS) development, one thing is certain: The FCS Mobile Gun System will require accurate, lethal, and responsive ammunition allowing line-of-sight (LOS) and beyond-line-of-sight (BLOS) target engagement. Consistent with concepts outlined in the lead system integrator block approach to FCS and the draft FCS Operational Requirements Document, the Mid-Range Munition (MRM) is the FCS Block I choice for lethality. MRM will add to the Army's combat capability by increasing standoff distance, reducing the logistics footprint, and decreasing the efficacy of enemy countermeasures.

Currently scheduled for a Technology Readiness Level (TRL) 6 guide-to-hit demonstration in September 2003, MRM provides both LOS and BLOS lethality for Block I FCS. It enables FCS to defeat advanced heavy armor threats and other targets to ranges 8 kilometers and beyond. Moreover, it supports FCS Block I objectives of expanding the battlespace and having a multimission direct-fire capability for the unit of action. It encompasses state-of-the-art seeker and lethal mechanism technologies, thus mitigating development risk for FCS Block II lethality, the Multi-Role Armament and Ammunition System. After a successful TRL 6 demonstration, a Milestone B decision advances the program into system development and demonstration (SDD) in time for FCS first unit equipped in FY08.

Current plans call for one of two competing MRM concepts to be chosen for an anticipated 48-month SDD. The Alliant Techsystems concept comprises a millimeter wave seeker and a kinetic energy projectile—essentially a long rod penetrator boosted into the target. The Raytheon concept has an infrared seeker and a shaped-charge warhead. While seekers will be tested in the guide-to-hit demonstration in the autonomous mode, the addition of offset targeting capability and fire control integration is contemplated for SDD. Although each concept has differing technology and test methods, common success criteria have been developed at both the system and subsystem levels.

Guide-To-Hit Demonstration

The guide-to-hit demonstration, to be conducted at Yuma Proving Ground, AZ, is a system-level evaluation. It consists of a minimum of one round fired at ambient temperature and normal gun velocity to a minimum target range of 5 kilometers. The target is a modern threat main battle tank within the expected sensor footprint. Each competing round will be expected to launch without damage to the cannon, demonstrate stable flight, activate its seeker, detect and track the target, maneuver to the target, and hit the target on the intended aimpoint within the allocated circular error probable.

The first subsystem evaluation will be for lethality. This will evaluate performance at a range between 3 and 8 kilometers and will measure target perforation and hole size. Additional analysis will measure probability of kill given a hit.

The airframe subsystem will be tested across all temperatures. The intent of this evaluation is to measure strength of design and the airframe's ability to achieve maximum range at 18-degrees quadrant elevation. The airframe will be expected to achieve a range of 8 kilometers at ambient temperature, have no structural failures, fully deploy its fins, and achieve the proper spin rate.

The MRM seeker/guidance and control subsystem will be tested both in a gun and in an operational environment exceeding 105 percent of maximum acceleration. In both cases, the intent is to measure the seeker's ability to respond to a series of maneuver commands. It is required to maneuver the projectile within pre-established predictions and maintain stable flight.

A minimum of three rounds fired across the temperature spectrum will test the propulsion subsystem. The rounds will be equivalent to tactical propellant performance, with a slug representing the appropriate mass and volume. The launch must not damage the gun and achieve ambient muzzle velocity.

Conclusion

The engineering groundwork ensuring a successful TRL 6 demonstration is firmly in place. Thus far, both contractors have successfully demonstrated airframe structural integrity and gun propulsion elements. Moreover, the airframe has already verified maximum range. Captive flight tests are planned to demonstrate seeker performance against an array of stationary and moving targets. Upon completion of the demonstration, the baseline design will be established; subsystems will have been designed, built, and tested; and hardware- and software-in-the-loop environments will be established to facilitate advanced development.

Beginning SDD in FY04 synchronizes MRM with the FCS schedule. Further reducing risk in the SDD phase is a TRL 7 demonstration (an actual system in an operational environment), followed by an interim Milestone B review. Success in these two events clears the way for building production qualification test hardware, the initial operational test and evaluation and, ultimately, the Milestone C and low-rate production decisions.

The MRM is well on its way to a successful TRL 6 demonstration in September 2003, followed by entry into SDD. It leverages existing technologies and is already demonstrating success at the subsystem level. The analytical and engineering underpinnings are already in place to reduce risk and ensure that this effective force multiplier will be ready for Block I FCS lethality.

LTC DAVE RICE is the Product Manager for Large Caliber Ammunition, Program Executive Office, Ammunition, Picatinny Arsenal, NJ.

Supporting The Force

OBJECTIVE INTEGRATED COMBAT, COMMAND AND CONTROL TECHNOLOGY

MAJ Robert Hannah and Randall R. Stevens

Introduction

Since the beginning of digital situational awareness (SA) integration onto our armored vehicles, our warfighters have been asking for ways to improve battle command on the move and command and control (C2) capabilities while at the "nametag defilade" position (see photo) or while dismounted from the vehicle. Currently, our armored leaders must get inside the platform to view SA displays and to send or receive digital C2 messages, thus losing the "eyeball" on the outside combat picture. This requirement is further emphasized by the integration of digital SA information on modern ground combat platforms (M1A2 SEP/M2A3) through the integration of Force XXI Battle Command Brigade and Below (FBCB2) systems. Objective integrated combat, command and control efforts will improve command and control capabilities by allowing the tank or vehicle commander to command his vehicle and maintain 100 percent SA from the nametag defilade position or while dismounted from the vehicle.

Background

Currently, vehicle commanders must be tethered to the platform to receive, transmit, and view SA and C2 information. Trying to input digital information such as a SALT (size, activity, location, time) report using the keyboard or cursor control while on the move is difficult, if not impossible. The addition of touchscreen capabilities improves input, but it is still difficult while on the move.

Whether using the keyboard, cursor control, or touchscreen, the vehicle commander is still required to drop down inside the vehicle to be able to input SA and C2 information. This takes the vehicle/unit commander's eyes off the terrain or combat picture and he loses his ability to command the platform in a close fight. The objective integrated combat, command and control effort will allow the track commander (TC) to receive FBCB2 reports through a secure wireless local area network (SWLAN) cordless communications system, transmit FBCB2 SA data through the use of a tactical voice activation system (TVAS), and view that data in his helmet mounted display (HMD). All of this can be done from the nametag defilade position while the TC fights the battle or while the TC is untethered and off the vehicle.

The Objective Integrated Combat, Command and Control Program was initiated to reduce the armored crewmen's burden, improve soldier-machine interface (SMI), maintain C2 while in the vehicle nametag defilade position, and to maintain combat tactical overmatch through the use of technology improvements and enhancements.

Interim objective integrated combat, command and control technology integration efforts are designed to provide armored vehicle commanders with the ability to execute six FBCB2 C2 joint variable message format (JVMF) messages through the use of a TVAS. The goal is to see selected FBCB2 JVMF message screens on the commander's display units (CDUs) via an HMD, and to provide cordless communications or wireless local area network (WLAN) capabilities. This allows the commander and crew to still command and communicate through either the AN/VIC-3 Vehicle Intercommunications System (VIS) and/or the Single Channel Ground and Airborne Radio System (SINCGARS) while untethered from the vehicle. The six FBCB2 JVMF C2 messages selected for the initial TVAS integration are SALT, MEDEVAC (Medical Evacuation Report), NBC1 (Nuclear, Biological Chemical Report Number 1), Fire Mission, Check Fire All, and SITREP (Situation Report).

A Joint Integration Effort

While addressing ongoing Abrams M1A2 SEP and Bradley M2A3 electronic obsolescence solutions, researchers also considered other combat enhancements such as objective integrated combat, command and control technologies. The intent was to improve the platforms' combat and tactical overmatch while extending the service life of these platforms out to 2030 and beyond.

Abrams tank commander at nametag defilade

Objective integrated combat, command and control is a joint technology integration effort with input from the Project Manager (PM), Abrams; PM, Bradley; PM, FBCB2; PM, Soldier; PM, Brigade Combat Team; PM, Paladin; the U.S. Army Training and Doctrine Command (TRADOC) Systems Manager (TSM) Abrams; TSM Bradley; TSM Force XXI; TSM Soldier; Future Combat Systems (FCS); the U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC); the U.S. Army Communications-Electronics Command (CECOM); and the platform prime (General Dynamics Land Systems/United Defense Limited Partnership).

Objective integrated combat, command and control is a means to improve SMI and reduce soldier burdens on our combat platforms. It is a means to enhance our armored crewmen's ability to maintain 100 percent SA and combat capabilities while off the platform.

Technology Focus

The objective integrated combat, command and control effort has focused on the use of commercial off-the-shelf (COTS) and military off-the-shelf (MOTS) technology solutions. The Objective Integrated Combat, Command and Control Program is focused on three new and improved technologies that will be merged into one effort to improve the vehicle SMI while reducing the soldier's burden. These three new technologies are discussed below.

Tactical Voice Activation System. TVAS is the first of these three new warfighter technologies to enhance combat effectiveness and improve SMI by using voice activation to manipulate FBCB2 message screens. TVAS is viewed as another input device like the keyboard or tank commander's cursor control device used to activate JVMF message sets in FBCB2. The requirements and functionality of TVAS have been defined by the warfighters and continue to be updated through subject matter expert reviews. The TVAS COTS technology selection is from ITT Command Voice under contract with CECOM; PM, FBCB2; and PM, Abrams. TVAS also provides growth potential and capabilities for platform functionality in the future (built-in test/fault isolation test, vehicle health, etc.).

Cordless Communications or WLAN. Cordless communications or WLAN provides a cordless interface to an existing VIS such as the AN/VIC-3, which currently provides digital connectivity within the vehicle SINCGARS and Enhanced Position Location Reporting System radio systems.

The objective integrated combat, command and control effort will also integrate a MOTS SecNet 11 SWLAN Type 1 encrypted industry standard PCMCIA card developed by Harris Corp. This cordless or SWLAN gateway effort is based on the current Institute of Electrical and Electronics Engineers 802.11b 2.4 gigahertz standard using a secure radio frequency (RF) link. The SWLAN integration effort is focused on a COTS PC/104 and PC/104-plus material solution to minimize space claims,

reduce power consumption, enhance functionality and reliability, and survive harsh ground combat vehicle environments.

SWLAN technology integration is key to allow armored crewmen to communicate with the mounted armored crewmen on both the VIS and RF nets in a secure mode while untethered or dismounted from the vehicle. SWLAN will also allow the passage of digital traffic to maintain SA. The goal of SWLAN is to provide a secure intercom/radio communication, where the crewman is operating untethered off the platform up to 500 meters away from the platform.

Helmet Mounted Displays. HMDs are the third essential requirement for objective integrated combat, command and control systems. HMDs provide the SA to the armored crewmen to allow the crew to see FBCB2 and platform digital data. The HMD allows armored crewmen to see and control the CDU digital information while at the nametag defilade position or off the vehicle untethered. The HMD is attached to the combat vehicle crewman's helmet and is connected to the modified mounted warrior vest. The objective integrated combat, command and control HMD solution is a MOTS HMD from the current PM, Soldier Land Warrior (LW) Program. Objective integrated combat, command and control HMD growth potential could display other functionality such as 2nd GEN FLIR (second generation forward looking infrared) and streaming video.

Goals

The objective integrated combat, command and control goals are as follows:

• Use the M1A2 SEP and Bradley M2A3 as the proof of principal (PoP) technology integration platforms to feed into other platform efforts such as the Interim Armored Vehicle, FCS, and the Objective Force Warrior Program;

• Enhance and improve SMI and provide hands-free operation;

• Do not add additional burden to the crew; and

• Receive continuous program azimuth checks from the warfighters.

Commonality

The Objective Integrated Combat, Command and Control Program focused on the integration of mounted warrior hardware. Thus, commonality between the current LW electronics was a key to this effort. Currently, the objective integrated combat, command and control effort shares the same LW load-bearing vest, HMD, and WLAN protocols.

The objective integrated combat, command and control effort integrates the following mounted warrior capabilities: wireless combat crew station, FBCB2 operations, vehicle crew station control, cordless voice communications (VIS/RF), communications security SWLAN Enhancement-National Security Agency-approved, TVAS, crewman HMD, thin client crewman electronics, and virtual network computing software architecture.

Objective integrated combat, command and control growth capabilities include vehicle software reconfiguration/download capabilities, SWLAN mission data loader, embedded tech/user manual capabilities, and embedded training/mission rehearsal capabilities.

Current Status

The Objective Integrated Combat, Command and Control Program supported the Mounted Warrior Soldier System Cordless Communications (MWS2C2) customer test (CT) at Fort Knox, KY, in August and September 2002. The program also supported a hands-on objective integrated combat, command and control demonstration at the Association of the United States Army (AUSA) Annual Conference in October 2002, and will support a final objective integrated combat, command and control PoP demonstration on an M1A2 SEP tank in Warren, MI, in January 2003. The MWS2C2 CT demonstrated two vendors' cordless communications solutions. Results of that customer test will also be available at the January 2003 objective integrated combat, command and control demonstration in Warren, MI.

Data and integration efforts from the January 2003 objective integrated combat, command and control demonstration will provide TVAS voice libraries and templates to PM, FBCB2 for use in building TVAS into the FBCB2 Version 7.0 software effort. It will also provide valuable TVAS, SWLAN, FBCB2, and electronics data, material and integration solutions to PM, Soldier for the Mounted Warrior Program.

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JAVELIN READINESS: MEETING THE LOGISTICS TRANSFORMATION OBJECTIVE

Supporting The Force

George E. Collier

Introduction

Is a 100-percent operational readiness (OR) rate achievable in today's environment of building military hardware to performance specifications and operations and support (O&S) budgetary constraints? For the Javelin weapon system, the answer is yes!

Javelin is a man-portable, fire-and-forget, shoulder-fired anti-tank weapon system capable of defeating all known and future threat tanks, armored vehicles, bunkers, buildings, and hovering helicopters out to a range of 2.5 kilometers. The Javelin system consists of a command launch unit (CLU) that contains a day/night sight, launch electronics, and missile software; the missile in its launch tube; and training devices built from commercial off-the-shelf equipment. Javelin meets the Army transformation objective through its overmatch lethality, light weight, high reliability, and reduced logistics footprint (manpower, training, maintenance, and supply).

The Javelin system is the product of a joint venture (JV) between Raytheon and Lockheed Martin and was built to a performance specification. The Javelin Anti-Tank Missile System is managed by the Close Combat Missile Systems (CCMS) Project Office, Program Executive Office, Tactical Missiles, Redstone Arsenal, AL.

ICS/LCCS

Early on, Army logistics planners recognized the need for Interim Contractor Support (ICS) until the system design stabilized. Javelin prime contractor ICS began in 1996 with the first system fielded and has yielded a Javelin OR rate of 99 percent and an operations and support cost savings of 60 percent over the replaced Dragon system. Javelin was awarded the Army O&S Cost Savings Award in 1997, one of the main factors in Javelin's Project Manager (PM) being named "PM of the Year" for 1998.

Key to the success of Javelin is the JAVTRAK database, where every Javelin end item and major subassembly is tracked by serial number. JAVTRAK is a real-time record of the location, configuration, condition, and maintenance history of every serialized system item. The cause of every failure, specific maintenance action taken, repair time, parts used, and CLU elapsed time meter reading is recorded. A maintenance profile is available for every item. Army managers know what items are failing and why. They also know what spare and repair parts should be procured. This data has been used to redesign hardware and increase reliability, keeping Javelin unit OR rates at the highest levels. JAVTRAK also provides managers with data to more effectively negotiate cost-effective ICS contracts. JAVTRAK is available to authorized personnel via a Web site. This Web site also provides the user with a Javelin "help desk" feature and latest system information.

The success of the ICS Program in supporting Javelin hardware and reducing O&S cost led senior Army managers to consider Javelin as a candidate for continued contractor support under a Life-Cycle Contractor Support (LCCS) concept. An analysis performed by the Army Cost and Economic Analysis Center validated and approved a comparison between contractor and organic support costs, resulting in the Army Acquisition Executive decision on March 13, 2002, permitting the Javelin Program to implement LCCS.

Javelin LCCS will begin in June 2003. The LCCS concept will build on the success of ICS and will go further by including performance-based incentives. Through a series of initiatives including fixed-price contracts, increased pay for fewer system failures, reduced turn-around-time (TAT), constantly high OR, and technology insertion, the contractor will be incentivized to increase reliability. Fewer system failures mean fewer maintenance actions, which translate into less contractor effort to maintain high unit OR rates. This approach will yield higher system reliability and can yield higher contractor profits.

Another unique feature of Javelin LCCS will be the partnership between the LCCS contractor and Letterkenny Army Depot (LEAD) for system maintenance. Under this partnership, LEAD will be a "subcontractor" to the LCCS contractor and will perform some depot-level maintenance. This will give the Army a "warm" base for Javelin support in the event the LCCS contractor withdraws from the LCCS Program.

The stated goal of Javelin LCCS is to increase system reliability. Javelin LCCS will move beyond hardware support concepts of the past that focused only on repairing failed hardware. The new concept will focus on repairing the hardware, examining why it failed, and taking action to prevent further failures. Javelin hardware will remain in the hands of the soldier where it belongs, and not in the maintenance shop. Javelin LCCS is a true win-win, best value opportunity for all key players in the Javelin Program, and greatly enhances the Army's combat capabilities.

Maintenance Concept

The Javelin LCCS maintenance concept will be simple, and field-level CLU maintenance will be limited. The Javelin gunner will perform preventive maintenance checks and services to include use of built-in test equipment (BITE). The direct support (DS) unit maintainer will use BITE to verify the fault, perform CLU external maintenance, and return the CLU to depot for repair. This concept meets the Chief of Ordinance transformation objective for wartime support by considering the

CLU a "black box" and only performing external repairs in the field.


A soldier fires Javelin.

Readiness

The ultimate goal in the logistics world is readiness; stated plainly, "readiness rules." Throughout the ICS phase, this goal has been the focus of all parties within the Javelin community. Notably, the Javelin JV has exceeded requirements in the area of customer service and customer relations. The net effect of remaining readily accessible and focusing on customer service/relations reflects dedication to mission and has contributed to a readiness rate consistently above the 90 percent DA goal. Because of extensive coordination within the contractor arena, the quality, accuracy, and completeness of work has always been exceptional through the ICS phase, and remains extremely high.

At the time this article was written, the TAT for depot-level maintenance was 15 days and 3.3 days at DS level. This surpasses the TAT performance requirements set forth in the ICS contract of 30 days and 10 days respectively. Of note is the fact that these indices are holding steady with only slight fluctuations. This is noteworthy considering the increased activity within the Army throughout the ICS phase, as well as an increase in the number of assets supported. All of these improvements have been accomplished without any significant increase in human and material resource expenditures and modest infrastructure expansion. This demonstrates completeness and quality of work on the part of the JV, and demonstrates contractor focus on a favorable TAT while preserving a high level of supportability standards.

In addition to the workday efforts performed at the contractor depot, contractor personnel have been accessible 24/7 to respond to unexpected actions and other contingency events, which further assures favorable readiness rates. In short, the contractor has excelled in all tasks required by the project office in support of all logistical responsibilities. The result is high rates of system availability directly attributed to contractor technical expertise, responsiveness, and flexibility. All of this significantly improves the Army's combat capabilities.

Enduring Freedom Support

The contractor-operated Javelin Maintenance Support Center is located in Fayetteville, NC. Since its inception, the center has supported U.S. Army units deployed in support of Operation Enduring Freedom. From the early days that saw the 10th Mountain Division's deployment to Uzbekistan, with operations in Afghanistan, through the relief of the Marines at Kandahar by the 101st Airborne Division, to the present transition to the 82nd Airborne Division, continuous Javelin logistics support has been available. The level of support has varied from the push packaging and shipping of additional spares to processing requisitions and shipping replenishment parts. A full contractor go-to-war capability remains on standby at high alert. Unsolicited reports from deployed units have cited the high level of support provided Javelin hardware, the high efficiency of the contractor, and quality of the equipment. Of note is an excerpt from a recent after action report by a noncommissioned officer from the 101st Airborne Division, recently returned from Afghanistan: "We used the CLUs a lot, every night for that matter. Beautiful piece of equipment."

Contractor Incentives

The LCCS contractor will be incentivized to continue to provide the highest level of support to the field. In addition to monetary incentives for increased reliability and system readiness, the contractor will be incentivized to incorporate hardware modifications that keep the system modernized and to increase system capabilities.

A special effort was made by the PM to identify tasks for which contractor incentives would provide the most benefit to the user and be the most objective to determine contractor success. A challenge for the contractor and the government will be to incentivize the contractor to modernize and increase the capability of system hardware. These worthwhile challenges to modernize the system and to give the user additional fighting capabilities will be met. A series of alpha-style contract team meetings are scheduled for the government and contractor to work out how this can be accomplished to mutual advantage. Contractor incentives will give the Army a more dependable Javelin weapon system that spends more time in the user's hand and not in the maintenance shop.

Conclusion

Javelin has achieved a 99-percent readiness rate using a variety of innovations. Next up: LCCS. Will LCCS yield a 100-percent Javelin readiness rate? All indications point to yes! The combination of factors (building to a performance specification, specific contract requirements with contractor incentives, depot partnering, standard Army supply systems, and extensive database usage) give contractor and Army managers the tools they need to achieve this elusive goal. Javelin LCCS is the most efficient, affordable, and effective vehicle for the drive to 100-percent readiness.

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TAIS MANAGES COMPLEXITIES OF THIRD DIMENSION FIGHT

Supporting The Force

James W. Kelton and Raymond J. Connolly

Introduction

It was the 7th inning as the San Francisco Giants faced the Arizona Diamondbacks on March 24, 2001, with their future Hall of Famer Randy Johnson on the mound. He released his blistering 95-mph fastball, and as the projectile crossed home plate, something unexpected happened. The fans, players, and umpires alike were mesmerized and shocked by the explosion of feathers at home plate as a flight of two doves crossed that lethal point of airspace at precisely the time of Johnson's deadly accurate pitch.

It wasn't planned. Most would say it was statistically impossible; yet it happened, providing a stark illustration of the high risk of operations in the third dimension of the battlespace. The flight of doves could have been a flight of Apaches. The baseball could have been a 155mm round, and the results would have been even more horrific. It happened over home plate, but it can happen over Pristina, Jalalabad, or anywhere America's sons and daughters are in harm's way.

The wartime problem of two flying objects (at least one being an aircraft) attempting to occupy the same space at the same time has existed since the implementation of the manned balloon as an aerial artillery observation platform. By the end of the 20th century, during Operations Desert Shield and Desert Storm, the U.S. military had developed procedures and documents to help alleviate the problem—the use of the Air Tasking Order (ATO) and the Airspace Control Order (ACO).

ATO And ACO

The ATO and ACO are large documents created to support the missions of the next air operation. These missions often involve cruise missiles and hundreds of aircraft, both manned and unmanned, from many nations. The ATO and ACO are designed to facilitate freedom of action in the third dimension of the battlespace to accomplish the joint force commander's intent and to minimize the potential for aircraft to unwittingly meet other airspace users "over home plate."

During Operation Desert Storm, these documents needed to be distributed rapidly and daily to many places across a 2,000-kilometer front. After the war, the Army concluded it must do a better job of receiving and disseminating the ATO/ACO, and must be able to do it digitally. Subsequently, the Army Aviation Center at Fort Rucker, AL, wrote the requirement for a system that will enable Army airspace managers to effectively and efficiently manage the use of airspace over the battlefield while minimizing the potential for fratricide. The new system was designated as the Tactical Airspace Integration System (TAIS). The Mission Needs Statement was approved in July 1993, and the Operational Requirements Document was approved in June 1995.

Development

The responsibility for materiel development of the TAIS was assigned to the Office of the Product Manager for Air Traffic Control Systems (PM, ATC) at Redstone Arsenal, AL. With no funds available for a new program in FYs 96 and 97, the program was scheduled to start in FY98. In mid-1996, however, the Army Aviation Center implored PM, ATC to accelerate the program so that the TAIS could participate in the Division XXI Advanced Warfighting Experiment (DAWE), scheduled to begin in July 1997 at Fort Hood, TX.

With little time and no research and development funds, the PM, ATC restructured the "spend plan" to initiate the program. The acquisition strategy was to create the TAIS as a nondevelopmental item. A market survey found four potential candidate systems. With the urgency to "get on contract" as soon as possible, an intensive effort was made to "piggyback" the TAIS within the scope of an existing contract. The result was to procure and modify two Joint Surveillance Target Attack Radar System (JSTARS) Common Ground Station shelters and to integrate additional off-the-shelf software. A modification of the JSTARS contract was made in January 1997, and the first TAIS (a prototype) was delivered to Fort Hood in June 1997, in time to participate in the DAWE.

In October 1998, a General Officer Steering Committee directed that the TAIS be acknowledged as the U.S. Army's digitized system to support the Army Airspace Command and Control (A2C2) mission. Shortly thereafter, in January 1999, the Army officially recognized the TAIS as a principle component of the Army Battle Command System (ABCS).

Capabilities

Deconflicting airspace and the users of that airspace to prevent fratricide, while concurrently ensuring freedom of action in the third dimension, is one of the key capabilities provided to warfighters by the TAIS. The system supports warfighters by automating A2C2 planning and operations functions as well as Air Traffic Services (ATS) tasks. It helps planners to build Army input for the joint ACO, to digitally disseminate the approved A2C2 overlay, and to electronically distribute the approved joint ACO to Army forces when received from the Airspace Control Authority (ACA) and the Joint Force Air Component Commander (JFACC).

The TAIS can display airspace control measures in two or three dimensions while monitoring the real-time airspace situation, giving commanders and their staffs situational awareness and the ability to visualize the airspace in ways never before possible. As an

ABCS Battlefield Automation System (BAS), the TAIS is interoperable with all other ABCS BASs and the U.S. Air Force Theater Battle Management Core System, providing a direct link to the JFACC/ACA.

The enthusiastic reception of the system by warfighters and the tactical ATC community is a direct byproduct of soldier involvement. Soldiers have identified many improvements in TAIS functionality. The inclusion of soldiers in the design and spiral development process has been a principle factor in the successful evolution of the TAIS and its widespread acceptance. TAIS has been an active participant in testing and development of ABCS common software. The TAIS underwent final acceptance testing and the government officially accepted system No. 1 on Aug. 10, 2000, from the prime contractor, General Dynamics Decision Systems (formerly Motorola Systems Support Group).

Equipment

The "full" TAIS, the AN/TSQ-221, is comprised of two High Mobility Multipurpose Wheeled Vehicles (HMMWVs)—Model M1113, Expanded Capacity Vehicles—two standard Army rigid-wall shelters containing the mission equipment package (MEP), two soft-sided shelter extensions, and two cargo HMMWVs. The prime power source is the Tactical Quiet Generator, 15-kilowatt power unit, Model PU-801. The MEP consists of the necessary computers, communication equipment, interfaces, and peripherals required to support automated A2C2 and ATS operations. The full TAIS is fielded to the en route platoons of ATS companies worldwide in direct support of division, corps, and echelon above corps headquarters. Six TAIS have been fielded to date, with a total of 31 systems to be fielded through FY08.

A subcomponent of the full TAIS is the TAIS Airspace Workstation (AWS). This integrated computer system comes in both a ruggedized, militarized version (green box) and a commercial off-the-shelf (white box) version. It is specifically designed for command, control, communications, computers, and intelligence (C4I) functions to support mission assessment, planning, and execution with tactical displays, integrated information management systems, operational communication decision aids, and planning aids. The TAIS AWS is designed to be fielded to elements that do not require the robust communication capabilities of the HMMWV-based full TAIS, such as battlefield coordination detachments, combat training centers, schoolhouses, and some echelon above corps-level commands.

Software

The TAIS software provides Army airspace managers with a powerful tool for accomplishing their missions. The ability to digitally receive and display airspace requests, automatically identify airspace conflicts, and digitally pass the Army requests to the JFACC or ACA provides tremendous reduction of workload over the previous manual procedures and greatly reduces the possibility of human error. Soldiers in the field have reported more than a tenfold reduction of processing time for these requests from the old way of doing business.

One of the most powerful and far-reaching additions to the latest version of TAIS software is a Web-based tool that permits any computer on a tactical local or wide area network to submit requests for airspace to TAIS. This Web interface allows not only Army elements without a TAIS workstation to submit requests, but also other Services, the Joint Forces Land Component Command, alliance and coalition forces, and other governmental and nongovernmental agencies.

Homeland Security

After the terrorist attacks in September 2001, the PM, ATC began examining how TAIS could contribute to the homeland security mission. Several missions and capabilities were identified. With ability to receive and display air-track information from the Federal Aviation Administration (FAA) and other source radars, TAIS can support airspace control operations in the event an FAA regional control center or airport control facility is disrupted or destroyed as the result of terrorist actions. It can also provide a CONUS interior point defense command and control capability for the National Airspace System, thus playing a key role in the management of airspace in the vicinity of potential terrorist targets such as airports, power plants, petroleum plants, or other sites in remote areas. A demonstration of these capabilities was conducted in February 2002 and validated the proof of concept for integrating TAIS capabilities with ground-based air defense assets to protect potential high-priority target sites.

Conclusion

The capabilities provided to the warfighter by TAIS are long overdue. The Army cannot afford to impede the application of combat power and possibly put mission accomplishment at risk because of inability to manage the airspace, and we certainly can't accept the loss of life and destruction of critical warfighting systems because of fratricide incidents in the third dimension of the battlespace. In that regard, much like the call to action embodied by the Korean War experience of "No more Task Force Smiths," TAIS exists to ensure that there are "No more Randy Johnsons!"

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Supporting The Force

Optimizing System Readiness . . .

PROGRAM EXECUTIVE OFFICE, SOLDIER

COL(P) James R. Moran

Introduction

On June 7, 2002, Assistant Secretary of the Army for Acquisition, Logistics and Technology/Army Acquisition Executive (AAE) Claude M. Bolton Jr. hosted the activation ceremony for Program Executive Office, Soldier (PEO, Soldier). The ceremony at the Fort Belvoir, VA, Headquarters Parade Field was attended by distinguished guests, friends, and family of Program Executive Officer COL(P) James R. Moran.

Bolton commented, "The soldier is the Army's ultimate weapon. He or she is the crucial and integral component of the successful employment of all Army systems. Amazingly, the soldier system has had no central organization focus—until today. PEO, Soldier changes that. This day is long overdue."

History

In 1999, the Army Science Board recommended establishment of a PEO to provide centralized management and executive-level acquisition management for soldier systems. Consequently, on Oct. 26, 2001, then Acting Army Acquisition Executive Dr. Kenneth J. Oscar created the PEO, Soldier to optimize soldier system acquisition programs' interoperability and standardization and provide executive-level authority and responsibility for program, technical, quality, and readiness management and logistics support.

PEO, Soldier also provides direction and integration of assigned programs and ensures effective interface with HQDA, other Services, combat developers, and supporting commands. Further, PEO, Soldier develops, acquires, procures, fields, and sustains safe, reliable, state-of-the-art, and cost-effective soldier systems.

PEO, Soldier is responsible for 346 acquisition category I, II, and III programs such as Land Warrior, Air Warrior, Interceptor Body Armor, Load Carrying Equipment, Advanced Tactical Parachutes, Thermal Weapon Sights, Night Vision Devices, XM-8, XM-29, and XM-307. The organization is focused directly and exclusively on the soldier—both today and throughout the Army's transformation to the Objective Force. PEO, Soldier ensures that the American soldier has what is needed to accomplish any mission swiftly and decisively.

Aviator's Night Vision Imaging System

Team Soldier

PEO, Soldier is organized to manage the soldier as a system, including everything a soldier wears, carries, and consumes in a tactical environment. For the first time in Army history, acquisition responsibility for the entire soldier is under one organization.

Management of PEO, Soldier acquisition programs is the responsibility of two project managers and six product managers. Project Manager, Soldier Systems is comprised of Product Manager, Soldier Equipment; Product Manager, Soldier Electronics; Product Manager, Soldier Sensors; and Product Manager, Aircrew Integrated Systems (ACIS). These product managers are located at Fort Belvoir, VA, with the exception of Product Manager, ACIS, who is located at Redstone Arsenal, AL.

Project Manager, Soldier Weapons is comprised of Product Manager, Individual Weapons and Product Manager, Crew-Served Weapons, all out of Picatinny, NJ.

The vision of PEO, Soldier is to be the premier center of excellence for transforming soldiers' capability to continuously dominate the battlespace across the full spectrum of peace and war.

Team Soldier encompasses many world-class Army organizations such as the Army Materiel Command, the Army Training and Doctrine Command, PEOs, and project and product managers. The team is proud to be partnered with these organizations in working toward the goal of ensuring that the soldier is the centerpiece of the formation.

Responsibilities

Project Manager, Soldier Systems provides the fundamental interface between the trained and ready soldier, the extremes of the operational environment, and the digital battlefield. It also provides direction and guidance for materiel development, acquisition, testing, product improvement, fielding, and supportability of soldier systems. The soldier system includes all items worn or carried by the individual soldier. Project Manager, Soldier Systems is the materiel developer of the Land Warrior Program, the first integrated fighting system designed to provide combat overmatch to the infantryman in the close fight.

Air Warrior

Product Manager, Soldier Equipment develops, fields, and sustains, as part of an integrated soldier system, individual soldier equipment for all operational environments within the soldier systems architecture. In addition, product manager personnel deal with a broad range of soldier provisions such as ballistic and personal protection; tactical, environmental, and personal clothing; individual and unit equipment; and chemical gear.

Product Manager, Soldier Electronics develops, acquires, and integrates electronic subsystems containing soldier load bearing, sensors, and weapon subsystems into the Land Warrior by using commercial off-the-shelf and government off-the-shelf technology. This product management office develops items such as the Land Warrior wireless local area network antenna, helmet-mounted display, Global Positioning System, soldier radio, and daylight video sight camera.

Product Manager, Soldier Sensors serves the needs of the individual soldier by managing the development; configuration; test and evaluation; procurement; and fielding of electro-optical, image intensification, and infrared technologies and laser and thermal imaging devices. Dismounted soldiers, ground crews, aircrews, and other soldiers will use this equipment, and it will be integrated into other systems for Army and Marine Corps project/product managers and program executive officers. In addition, Product Manager, Soldier Sensors manages the hand-held night vision equipment with the objective of increasing the soldier's combat effectiveness by improving lethality, command and control, sustainability, mobility, and survivability. The Product Manager, Soldier Sensors also ensures horizontal technology integration for soldier-borne sensors (emitters and detectors) used in target acquisition and aiming systems.

Product Manager, ACIS provides centralized life-cycle project management of Army and joint Service

THE SOLDIER

"It is the soldier, not the reporter who has given us freedom of the press.
It is the soldier, not the poet, who has given us freedom of speech.
It is the soldier, not the campus organizer, who has given us the freedom to demonstrate.
It is the soldier who salutes the flag, who serves beneath the flag,
and whose coffin is draped by the flag, who allows the protestor to burn the flag."

Father Denis Edward O'Brien
U.S. Marine Corps

programs that improve aircrew safety, increase aircrew and passenger survivability, and enhance aircrew performance in modern technology aircraft. Aviation Life Support Equipment (ALSE) addresses those items that sustain aircrews and passengers throughout the flight profile and flight environment. ALSE enhances mission performance and aircrew survivability during combat and noncombat operations, through an aircraft crash, and through the post-crash period prior to rescue.

Some of the systems in which Product Manager, ACIS has been involved to meet future aviation life support challenges include Air Warrior, helmets and helmet-mounted subsystems, eye protection visors, aircrew restraint and air bag systems, aircraft oxygen systems, survival systems and equipment, flotation devices, and virtual cockpit.

Project Manager, Soldier Weapons ensures that U.S. soldiers have an overmatch in individual and crew-served weapon capabilities on present and future battlefields. This project manager also maintains individual and crew-served weapon readiness for the Army through intensive management of the full acquisition life cycle. Personnel are immediately responsive to the soldier's wartime individual and crew-served weapon requirements. Project Manager, Soldier Weapons ensures interoperability with soldier system programs to achieve the goals of the Objective Force Warrior.

Product Manager, Individual Weapons is developing the lethality upgrade to Land Warrior and the baseline system for Future Combat Systems.

Product Manager, Crew-Served Weapons manages research, development, test and evaluation, and procurement for XM-307, pistols, shotguns, rifles, machine guns, carbines, grenade launchers, lethal and nonlethal ammunition and grenades, and optics and fire control that are weapon-mounted. The product manager also oversees the integration of all items that claim real estate on small arm platforms.

Conclusion

PEO, Soldier provides centralized and executive-level acquisition management for soldier systems. PEO, Soldier is also responsible for developing and procuring state-of-the-art, cost-effective soldier systems to ensure that soldiers have what they need to accomplish missions swiftly and decisively.

For further information, call PEO, Soldier at (703) 704-2802 or DSN 654-2802, or go to the Web site at **www.peosoldier.army.mil**.

COL(P) JAMES R. MORAN is the Program Executive Officer, Soldier—the first to lead this new organization. He has a B.S. from the U.S. Military Academy, an M.S. in mechanical engineering from the Air Force Institute of Technology, and an M.S. in national resource strategy. His education also includes completion of the Materiel Acquisition Management Course, the Army Command and General Staff College, the Defense Systems Management College's Program Management Course, and the Industrial College of the Armed Forces.

WINNING THE WAR ON OBSOLESCENCE

Laura E. King

Introduction

Claude Shannon, the acclaimed mathematician of the 1930s, once described information as the "reduction of uncertainty." In the rapidly changing commercial off-the-shelf (COTS) technology environment, obtaining information to combat obsolescence is critical. As acquisition professionals procure the latest technology for insertion into weapon systems, uncertainty cannot be tolerated. This is the story of one office's journey into the realm of the "reduction of uncertainty." The resulting lessons learned should be of interest to anyone dealing with technological obsolescence.

Background

The Joint Tactical Ground Station (JTAGS) was developed as a transportable information processing system that provides theater combatant commanders the capability to receive and process satellite threat data on tactical ballistic missile launches. JTAGS warns, alerts, and cues the warfighter in real time. JTAGS was a joint interest Army/Navy development program managed by the JTAGS Product Office headquartered in the Program Executive Office (PEO) for Air and Missile Defense, Huntsville, AL. As JTAGS was being designed, thought was already given to future product improvements that would take advantage of changing technologies and doctrine. The current JTAGS works with Defense Support Program sensors. The Multi-Mission Mobile Processor (M3P), the follow-on to JTAGS, will take advantage of the Space Based Infrared System (SBIRS) constellation when deployed. The M3P will be used by the Air Force for strategic mission operations. The M3P will provide improved launch point predictions, trajectory and cueing information, and predicted ground impacts.

Delays in the overall SBIRS Program caused the fielding of the M3P to be delayed almost 2 years from the date originally projected. Cumulatively, this resulted in obsolescence issues affecting the sustainment of JTAGS. As such, the JTAGS Product Office and its contractor for depot-level logistics support, Northrop Grumman, had to determine the actions necessary to ensure that readiness levels at each JTAGS location were not adversely impacted.

Analysis Process

JTAGS Product Office personnel met several times with Northrop Grumman personnel to determine the best approach to resolve issues that were likely to occur as a result of the schedule slip. COTS processors were identified as the most likely items that would be impacted by the schedule delay. In addition, some JTAGS system-unique equipment that was commercially adapted could be impacted. Some of these items had not even been purchased or built since the JTAGS fielding in 1997. Failure and usage data were sought to do a prognostic analysis. A survey was also done to determine what companies could still provide spare parts, what suitable substitutes might be available for items no longer produced, and which items might be re-engineered or reverse-engineered. These analysis efforts formed the basis for what would be a two-pronged approach to solving the obsolescence issues now being realized by the JTAGS Product Office.

Solutions

Two approaches were developed. The solution would be dollar-driven, dependent on operations and maintenance (O&M) funding availability. The better but more costly solution was to replace all of the COTS equipment with the latest technology. This approach would ensure that JTAGS would meet the requirements to remain in the field until the M3P could be fielded. If another slip in the SBIRS Program should again impact the M3P fielding schedule, the optimal solution could also ensure continued JTAGS operational capability and readiness levels beyond just the current 2-year delay. The second option, or "bare-bones" approach, would attempt to maintain JTAGS. This approach, with the degree of uncertainty of vendor support and the unpredictability of certain failures resulting from extended operations of the JTAGS, was assumed to have a large risk to readiness. Unfunded requirements were identified, then projected and requested through the budget process for O&M. The JTAGS Product Office also requested spare equipment from the Attack Launch Early Reporting Theater (ALERT) Program that, at the time this article was written, was scheduled to be deactivated in late 2002.

Trouble Strikes

The midplane is a COTS JTAGS system-unique item. The midplane functions similar to a backplane found in most computer systems. It is the top level in a hierarchical network. During the summer of 2001, a midplane failure occurred. A spare midplane had been initially procured at the same time the midplanes destined for the JTAGS had been bought. The spare was installed and the unserviceable midplane returned to the JTAGS depot-level contractor. The depot sent the unserviceable midplane to Computer Ruggedization & Integration (CRI) for repair. In the interim, from the time of purchase of the midplane until the first request for repair, the original manufacturer had been bought out by another company and the drawings for the test fixture were missing. Then in March 2002, a second midplane failed, with the potential for lower unit readiness.

A tiger team was formed to address the midplane issue with CRI. The team consisted of JTAGS Product Office and Northrop Grumman personnel. The issue was elevated to MG Urias, PEO, Air and Missile Defense, who quickly came onboard with his support for unfunded requirements. Additionally, he wanted CRI to recognize the sense of urgency required to ensure JTAGS systems are at their highest readiness rate. The drawings for the test fixture were located shortly thereafter. Northrop Grumman went into action and contracted the building of the test fixture, repair of the two midplanes, and the building of two additional spares to supplement JTAGS in the out-years. The midplane has since been repaired and has enhanced JTAGS unit readiness.

Lessons Learned

Throughout this process, the JTAGS Product Office learned many lessons in dealing with obsolescence issues. Some are listed below.

• As soon as a change takes place that extends the life of a fielded system, action is required to assess the impact of the change and budget for any unforeseen requirements necessary to ensure readiness levels and system sustainment.

• Planned technology insertion is required in today's environment of rapidly changing technology.

• Periodic market surveys of vendors who can provide spares for equipment no longer being manufactured are essential.

• Relative to funding, get visibility and support early on from those in leadership positions. Continue to push *hard* for funding.

Resources

During the process of dealing with obsolescence issues, a number of organizations were identified that may be of use to other program management personnel trying to resolve obsolescence problems:

The Manufacturing Science and Technology Division within the U.S. Army Aviation and Missile Research, Development and Engineering Center (AMRDEC). Its focus is on obsolescence management capabilities and services. Some of the services AMRDEC provides are as follows: rapid-response locating of residual obsolete components; comprehensive obsolescence management risk assessments; program parts selection; component availability projection; projected obsolescence resolution sustainment costs for out-year budgeting; and solution recommendations, cost analysis, and implementation plans. AMRDEC can be reached by e-mail at **obsolescence@rdec.redstone.army.mil**.

Letterkenny Army Depot (LEAD). LEAD works on electronic systems integration, wiring harnesses, fiber-optic cables, and military standard soldering. It also repairs and tests multiple-layer circuit boards down through three layers. To do business with LEAD, contact James Goins, LEAD Liaison Officer at (256) 876-0410, DSN 746-0410, or by e-mail at **james.goins@redstone.army.mil**.

Tobyhanna Army Depot (TYAD). TYAD offers the capability to reverse-engineer printed wiring assemblies (PWAs), both double-sided and multilayer boards. If requested, a full technical data package (TDP) can be developed from the effort. Once developed, the TDP can be used to procure PWAs from commercial sources or be supplied by Tobyhanna in small quantities.

Because of system obsolescence and downsizing, production quantities for most systems are decreasing. Inventory levels for spares are also decreasing to accommodate the upgrade to the newest technology. Just-in-time manufacturing practices used at Tobyhanna for low-production runs eliminate the burden of having to keep excess, obsolete, or soon-to-be-obsolete parts sitting on the shelf. To do business with TYAD, contact Frank Estock at (570) 895-7089, DSN 795-7090, or by e-mail at **Frank.Estock@tobyhanna.army.mil**.

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BUSINESS CASE ANALYSIS

Esther Morse

Introduction

DOD organizations are endeavoring to find ways to preserve and maintain warfighting force structures in spite of drastic budgetary constraints and personnel shortages. Consequently, many of the Services have focused on reducing support costs to maintain warfighting capability. The natural trade-off between downsizing, streamlining, and consolidating functions has become a reality in DOD's search for reducing costs associated with operations and infrastructure.

The Business Case Analysis (BCA) is often used in industry, particularly in the information technology (IT) arena, among project managers and in companies contemplating mergers and acquisitions. As Defense agencies continue to face current and future challenges in the acquisition arena, the need to conduct BCAs is becoming more apparent. At the highest levels, it is imperative that decisionmakers develop long-range strategic plans that define mission, functional requirements, and critical success parameters.

What Is A BCA?

A BCA is a valuable tool that decisionmakers use to evaluate alternative approaches in the allocation of scarce resources and in developing sound business process solutions. It provides a structured and systematic methodology for assessing the financial consequences of business decisions. The general methodology, typically known as a financial analysis, can be tailored to fit particular circumstances.

In response to recent congressional mandates, many federal agencies have developed investment management processes to better select, plan, and manage their major programs, projects, and initiatives. During the selection process, agencies establish priorities and make decisions regarding which efforts will be funded. An important characteristic of the selection process is that a project's proposed benefits and risks are analyzed *before* approval is granted to obligate a significant amount of funds for a particular effort. The BCA performs this function.

There are common elements that apply in all circumstances, varying only in the degree of application to the analysis of particular problems. The common elements include, but are not limited to, the following:

- **Problem Definition** . This element includes establishing an objective for the analysis, stating the assumptions that frame the analysis and, as appropriate, laying out alternative solutions to the problem being analyzed.
- **Data Collection Phase** . This element identifies the data needed to meet the objective of the analysis, a

BUSINESS CASE ANALYSIS: DCMA

Purpose of business

Resources

Analysis

Workload trend data

Performance plan adjustments and unit cost impacts

Discussion of efforts to maximize use of existing resources

Impact if additional resources are disapproved

Figure 1.

method of classifying the data in terms of the types of data required (cost, overload, performance, etc.), and a data collection plan, which specifically addresses the data to "fill in the blanks" of the identification and classification studies.

• **Evaluation Phase** . This element analyzes the data to address the objective of the study and to develop the findings that specifically relate the data to the objective.

• **Reporting Phase** . In this phase, a report or briefing is prepared that presents the conclusions and recommendations of the study.

Air Force Use Of BCAs

The Air Force has found the BCA to be very useful in its efforts to reduce total ownership costs of major weapon systems. From the Air Force perspective, the BCA is a decision document that links an investment decision to a strategic plan. A complete BCA documents the business operating environment, establishes a financial baseline for existing operations, portrays the results of an economic analysis on alternative investment opportunities, and describes the projected changes in the financial position after undertaking the proposed initiative. The Air Force's Reduction in Total Ownership Cost BCA package includes all of the components of a standard commercial BCA except that, after a formal economic analysis of the alternatives is completed, only the selected alternative is presented in the BCA.

Air Force BCA Plan

The BCA plan is the supporting documentation that accompanies the BCA package. The plan should contain sufficient documentation to communicate the proposed initiative. It may include all or part of the formal economic analysis to defend the initiative.

Part 1: Alignment
Section 1 Business needs and alignment with strategic business goals
Section 2 Assumption and constraints

Part 2: Gap Analysis
Section 3 Current state assessment
Section 4 Future state assessment
Section 5 Gap analysis

Part 3: Alternative Analysis
Section 6 Analysis of alternatives
Section 7 High-level logical design
Section 8 Cost or benefit analysis
Section 9 Conformance

Part 4: Project Management
Section 10 Risk analysis
Section 11 Acquisition strategy
Section 12 Project life-cycle analysis

Figure 2.
IT BCA sample outline

The BCA plan is designed to provide an overview of the proposed implementation and management of the initiative being undertaken. A financial profile portrays the cost and economic factors of the initiative. The plan should communicate these costs in terms of schedules and technical aspects of the proposed initiative. It includes the risk analysis, risk mitigation plans, and a summation of other alternatives considered in the formal economic analysis.

For additional information on how the Air Force makes use of BCAs, see its *Reduction in Total Ownership Cost Guidebook*, Version 2.1, dated Oct. 31, 2001.

Navy Use Of BCAs

According to the *Naval Supply Systems Command Business Case Analysis Guidebook for Fleet & Industrial Supply Center Partnerships*, dated March 1995, cost analysis, cost-benefit analysis, and functional economic analysis are the most popular categories of financial analyses used to assess business areas within DOD. The major differences between these three categories are found in the problem definition, types of data considered, and in the levels of complexity. Their differences may be summarized as follows:

• **Cost Analysis** . This analysis requires a simple statement of the problem and desired outcome of the analysis, well-defined global assumptions that clearly outline the scope of the analysis, a single preferred solution to be analyzed in comparison to the status quo, a preponderance of the data based on hard-documented and verifiable sources, and a straightforward presentation of the data in constant-year dollars, which compares costs of the status quo alternative to the costs of the preferred solution.

• **Cost-Benefit Analysis** . This analysis requires a formal requirements analysis, usually presented in

Agency Goals And Objectives	System Goals And Objectives
Agency Goal 1	System Goal 1
Objective 1	Objective 1
Objective 2	Objective 2
Objective 3	Objective 3
Agency Goal 2	System Goal 2
Objective 1	Objective 1
Objective 2	Objective 2
Objective 3	Objective 3

Figure 3.
Recommended IT BCA structure

a Mission Needs Statement, global and alternative assumptions that introduce greater complexity in the analysis of the problem, and consideration of multiple alternative solutions. More flexibility is allowed in the use of extrapolated data in the development of future costs and benefits of alternative solutions. This analysis may require a sensitivity analysis to test assumptions and constraints and the presentation of findings in terms of constant dollars, current year dollars, and net present value.

• **Functional Economic Analysis** . This analysis requires a formal requirements analysis, which includes development of all feasible alternative solutions; activity or process analysis; calculation of full costs and benefits of all alternative solutions; comparison of alternatives through multiple financial measures such as net present value, benefit-cost ratio, and amortization rates; mandatory sensitivity analysis of all key parameters; an analysis of risk through the development of risk-adjusted cash-flow projections, and the presentation of results comparing all feasible alternatives to the recommended solution.

DCMA Use Of BCAs

Research for this article revealed that the Defense Contract Management Agency (DCMA) also has experience with BCAs. A synopsis of DCMA's outline is shown in Figure 1.

BCAs In The IT World

Carole Meals, a Principal in the Center for Science and Technology, has worked a wide variety of IT and acquisition projects for Mitretek Systems clients and believes that the BCA is the sales document for the system. The BCA is input to the selection process and makes the business case for going forward with a project. The BCA, which should provide the rationale for why a project is critical to the agency's mission, includes information concerning scope, alternative considerations, estimated costs and return on investment, schedule, risk, and technical strategy.

In the IT arena, a BCA is generally divided into sections, and the sections are grouped with like sections into parts. A sample outline for an IT BCA is shown in Figure 2, and a recommended structure for contents of an IT BCA is shown in Figure 3. These figures are provided as tools to assist in developing BCAs, realizing that some tailoring will be necessary in adapting the structure for use in the acquisition arena.

Conclusion

This article is intended to spark interest in the topic of business case analyses and, hopefully, to motivate readers to search the guidebooks and Web sites provided to satisfy their quest for conducting a BCA. The more research that is conducted, the more comfortable acquisition personnel will become with the concept, and it will become second nature. Continued and consistent use of this concept within the Army will result in more sound business decisions. The best part, however, is that actual implementation of the BCA process will yield greater returns on the Army's resource investments of dollars, people, time, facilities, and effort.

For additional guidance and more detailed information on the topic, see the following Web sites and references: **http://www.safaq.rtoc.hq.af.mil**, **http://www.solutionmatrix.com/business-case-guide.html**, and **http://www.mitretek.org/pubs/Sigma_pubs_spring02/chap4.pdf**.

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AAC CIVILIAN PM AND POST-UTILIZATION TASKFORCE

Henry I. Jehan Jr.

Introduction

The Army Acquisition Corps (AAC) leadership recognizes that the AAC continues to experience serious problems in civilian career management. Although much has been done to make civilian files competitive in the selection board process, the low selection rates clearly indicate that civilian applicants have not faired well on recent product or project manager (PM) selection boards. Career expectations of those who were selected to PM positions were based on the promises of former AAC leaders that selectees would have follow-on assignments of "appropriate equal or greater responsibility." But no institutional process was established to provide these assignments to PMs, Senior Service College graduates, and Long Term Training Program participants. In some cases, individuals were simply left to their own devices to find follow-on positions.

The Taskforce

In recognition of these problems, the Assistant Secretary of the Army for Acquisition, Logistics and Technology/Army Acquisition Executive (ASAALT/AAE) Claude M. Bolton Jr. tasked the Acquisition Support Center (ASC) to establish an AAC Civilian PM and Post-Utilization Taskforce. Henry Jehan, former Project Manager, Military Satellite Communications, was given the post-utilization assignment of leading the effort. The taskforce was initiated in early July 2002 and was tasked to report before Sept. 30, 2002, to the ASAALT and his Military Deputy, LTG John S. Caldwell Jr.

To ensure that the taskforce developed in-depth solutions that addressed the root cause issues and not just some of the symptoms, a life-cycle approach was used. In many respects, a PM's career can be thought of in terms of the acquisition life-cycle model, the same model used to describe managed weapon systems. Just as a weapon system transitions from concept, to development, to fielding, and to disposal as it progresses through the life cycle, antidotal evidence indicates that a PM follows an analogous career path. The individual enters the acquisition workforce with the hope of becoming a PM, experiences development and training, and is *fielded* as a PM. Eventually, he or she moves on to disposal in a post-utilization assignment or through retirement. Because multiple individuals pass through the life-cycle process, the events have a circular linking. An event in one phase of the life cycle for an individual directly impacts previous life-cycle events as they are subsequently experienced by other individuals. Thus, the taskforce cannot look at post-utilization as a problem apart from the rest of the career path. Although chartered to look at the post-utilization issue, the taskforce had to take a broader view and look at the full life cycle.

Issue Identification

The first challenge that the taskforce faced was to establish a comprehensive picture of the issues. Although antidotal information was available from many sources, including some former PMs and HQDA staff, it was incomplete at best. Likewise, available information from previous action teams was also very limited in scope. Thus, the taskforce began with an unprecedented effort to acquire comprehensive data describing the issues. They elected to conduct sensing sessions to capture the full spectrum of issues (Figure 1). Invitations were sent to two groups: current and former centrally selected PMs and AAC or HQDA staff. The two groups were purposely segregated to ensure that the input received would give a 360-degree picture of the issues from the perspective of both the PMs and the managing staff.

Invitees to the PM session included 34 individuals who had completed a tour as a product or project manager and 15 newly assigned PMs. On July 31, 2002, 26 of the invitees (Figure 2) assembled at the Defense Acquisition University Collaborative Management Decision Facility at Fort Belvoir, VA. During the daylong session, they captured the issues associated with the life cycle of an AAC civilian PM. The next day, 13 participants representing the U.S. Total Army Personnel Command and ASC's Force Structure, Acquisition Career Management, and Personnel Management Divisions met in the same facility to repeat the issue-

gathering process. By using automated collaboration tools, personnel from the two sensing sessions identified and categorized 136 issues in 32 separate, but not necessarily unique, categories. They also identified concepts for corrective action—information that was segregated from the issue data and held for the solution-analysis effort.

The next step was to prioritize the issues so that appropriate solutions could be generated. The taskforce made two basic assumptions: Most of the issues collected in the sensing sessions were symptoms describing a smaller number of root cause issues, and, for the most part, the raw issue data from the sensing sessions did not create a clear and complete articulation of the root cause issues. Based on these premises, a small working group was established and tasked to extract the root cause issues from the symptomatic issues identified in the two sensing sessions and the data available from prior assessments.

The root cause issue analysis resulted in identification of 14 root cause categories, supported by 40 detailed root cause issue statements. The 14 root cause categories were as follows:

- Unclear and inconsistent mobility expectations and policy,
- Lack of financial incentives,
- No career path beyond GS-15 (or equivalent personnel demonstration broadband level) or O-6 level PM,
- Improper use of permanent assignments to temporary or term positions,
- Inadequate supervisory and pre-command training,
- No meaningful civilian career model,
- Lack of civilian understanding of the board process,
- Deficiencies in Senior Rater Potential Evaluations,
- Deficiencies in Acquisition Civilian Record Briefs,
- Inadequate and inconsistent administration of benefits and entitlements,
- Inadequate peer socialization and leadership recognition,
- Inadequate cross-function communication within OASAALT,
- Lack of acquisition requirements accountability, and
- Inadequate leadership commitment and follow-through.

Solution Identification

The third phase of the taskforce effort was to identify solutions to the 40 root cause issues in the 14 root cause issue categories, develop implementing strategies, staff the appropriate implementation actions, and secure approval for implementation. To accomplish this, a solutions identification team was established.

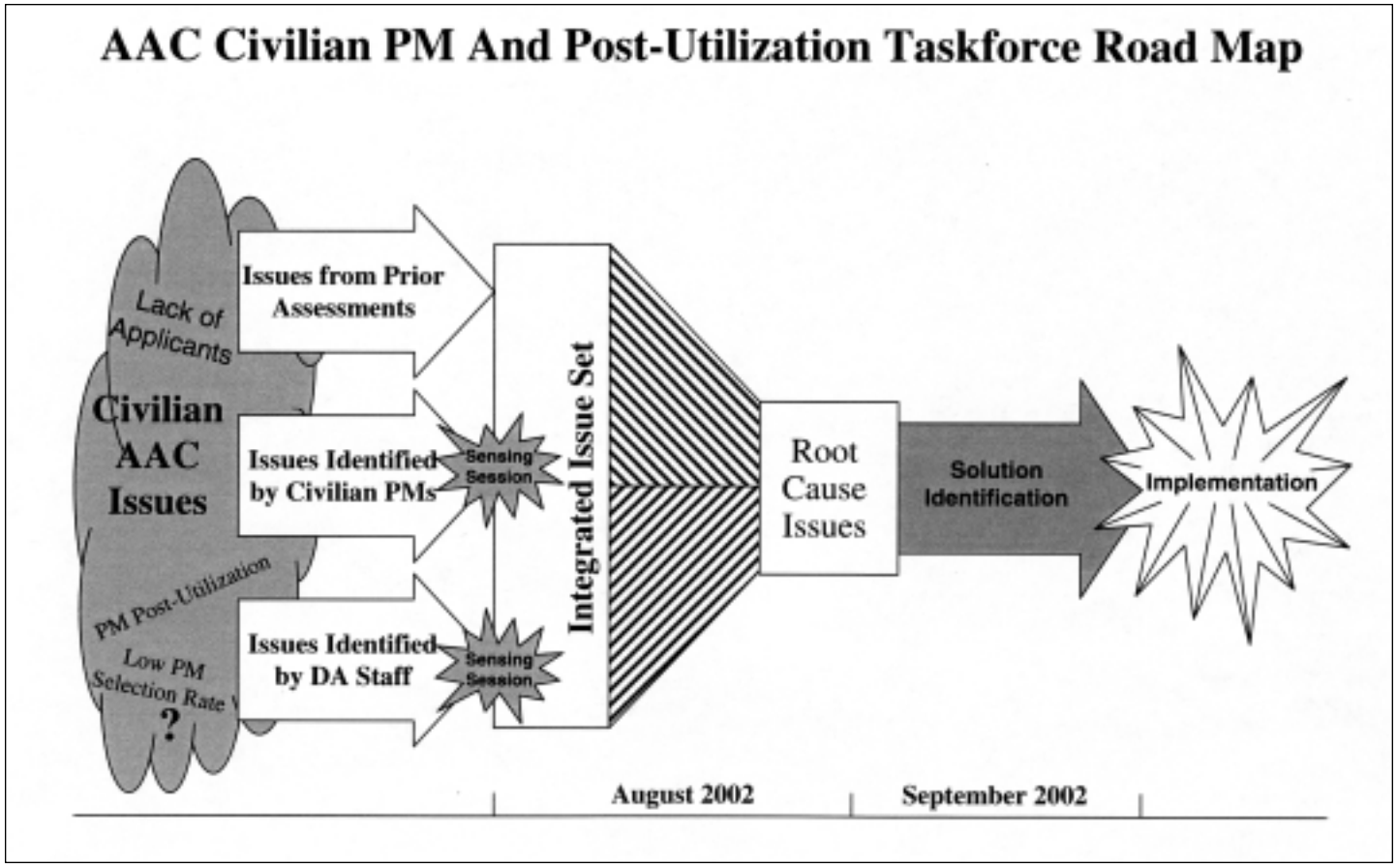

Figure 1.

PM Sensing Session Participant Statistics

There were 49 individuals in the population of current and former centrally selected civilian product and project managers.

• Twenty-two were current or former product managers (8 of whom became project managers).

• Thirty-five were current or former project managers (8 of whom were also former product managers).

Of the 49 individuals, 26 participated in the sensing session. Of these 26:

• Five are currently product managers.
• Five are currently project managers.
• Three are in follow-on positions of greater responsibility (1 SES).
• Three are currently in follow-on positions of lesser responsibility.
• One is in a holding position until a job materializes.
• Three started the Industrial College of the Armed Forces in August 2002.
• Three have retired.
• Two will retire by the end of 2002.
• One left DA for government service outside of DOD.
• Five have been project managers twice.
• Four were product managers before becoming project managers.
• Five were in the Competitive Development Group before becoming product managers.

Figure 2.

The team reviewed the root cause issues and the suggested solutions from the two sensing sessions. In applying solutions to the root cause issues, it was determined that the list was incomplete. Subsequently, 10 additional root cause issues were added. Because some solution actions corrected problems across several root cause categories, several of the root cause issues were addressed by a single solution. When the list of root cause issues and solutions were recategorized by solution category, the 14 root cause categories were reduced to the following 10 solution categories.

• Road to Senior Executive Service (SES),
• Personnel action execution,
• Personnel management policy,
• Benefits counseling and administration,
• Civilian career model,
• Board selection process,
• Training initiatives,
• DA policy,
• ASC and PERSCOM Acquisition Management Branch policy and procedures, and
• Leadership.

The taskforce identified solutions for every root cause issue in the 10 solution categories. Where possible, the solution was implemented at the staff level. In some cases, implementation required action by senior leadership. And, in a few cases, corrective action required identification of efforts to change DOD policy or law.

On Sept. 23, 2002, the taskforce provided an outbriefing to the AAE on the 34 implementation actions it identified. In particular, the briefing focused on the 16 actions requiring AAE attention. The AAE was also informed of the five solutions implemented at the staff level and the 13 actions requiring further staff effort. Bolton was favorably impressed with the results of the taskforce and expressed his support for continued efforts and execution on all but one of the implementing actions. While some of the improvements suggested by the taskforce will take time to fully implement, we expect to see some near-term results. In conclusion, the taskforce has identified, and senior leadership has endorsed, implementation of corrective actions that will go a long way toward eliminating the problems of civilian PM post-utilization and low selection rates.

The inputs from the sensing sessions, a listing of the root cause issues, the identified solutions, and the implementing actions can be found at **http://asc.rdaisa.army.mil**. (Click on **AAC Civilian PM and Post Utilization Taskforce**.)

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THE ARMY ACQUISITION WORKFORCE CAMPAIGN PLAN

Ross Guckert

Introduction

As the Army's Director for Acquisition Career Management (DACM), LTG John S. Caldwell Jr. has captured his vision for the acquisition community in the Army's Acquisition Workforce Campaign Plan. The Acquisition Workforce Campaign Plan is an initiative to ensure that the workforce is postured, sized, and trained properly as well as equipped with the right tools at the right time to support Army transformation now and in the future. As the Army is changing to meet the emerging and dynamic threat of terrorism, the workforce must adapt accordingly.

The acquisition workforce is serving at a critical time in its history—facing a retirement-driven talent drain—with as much as 50 percent of the workforce expected to be retirement-eligible in the coming years. At the same time, the workforce is expanding, with the approval of the Science and Technology (S&T) Manager and Facilities Engineering (FE) career fields. Further, the Army is realigning itself, and resources to support the expanding acquisition workforce will be scarce.

Operating in this resource-constrained environment provides an opportunity for the acquisition community to reassess its current programs and consider new ones to meet the emerging threat. The acquisition workforce must not forget that it is ultimately charged with providing the systems and support for a strategically responsive force, enabling warfighters to be armed with combat capabilities to dominate across the full spectrum of operations.

Workforce Status

The Army's acquisition workforce is comprised of more than 43,000 members, including the recent assimilation of more than 15,000 new members resulting from the refined Packard definition of the workforce. These numbers include both military and civilian personnel, with nearly 2,000 military officers (approximately 5 percent). Within the workforce membership, there are more than 9,000 critical acquisition positions (i.e., GS-14 (or equivalent personnel demonstration broadband level) or lieutenant colonel and above) of which all incumbents are required to be Army Acquisition Corps (AAC) members. The workforce further breaks down into 11 career fields, including the recently approved S&T Manager and FE career fields. Assimilation of these new career fields is underway, and they are expected to bring an additional 15,000 new members into our workforce. This adds to the number of challenges we will face now and in the near future. These challenges must be actively addressed to ensure that our workforce is postured to meet its transformation objectives.

Challenges

Acquisition workforce members have a responsibility to recognize challenges and to play a proactive role in addressing them. Support from the Army's leadership down to each workforce member is essential if the Army is to be successful in maintaining its status as the world's premier fighting force. Although the workforce appears healthy on the surface, it must be proactive in maintaining relevance and credibility, providing programs that develop leaders, enabling transformation, supporting the war on terrorism, and attracting and retaining the best personnel to accomplish the mission. Specific challenges in addressing these tasks include the following:

- Strengthening our relationship with the warfighter;
- Maintaining the professionalism of the assimilated workforce;
- Managing the Army's realignment;
- Developing programs and strategies to attract and retain a skilled workforce;
- Handling the predicted retirement wave;
- Directing civilians with no centralized management; and
- Securing funds for training, education, and experience opportunities.

Strategic Objectives

The DACM has established three strategic objectives to address the above challenges. Achieving these objectives will transform the Army acquisition community and accomplish the defined mission of the workforce. A discussion of these objectives follows.

Strengthen our relationships with the warfighter. Operational Army personnel may not fully appreciate the role acquisition workforce members play in assisting them in mission accomplishment. As "An Army of One," these personnel must understand that the AAC is just as much a functional part of them as the armor, infantry, or signal branch. The message must be conveyed that the same leadership qualities are required and exemplified in the AAC as they are elsewhere in the Army. An outreach/communications plan to interface with the rest of the Army and beyond will be critical to the success of this objective. This plan includes identifying systems displayed at the annual Association of the United States Army (AUSA) symposium as "Brought to you by the AAC." The plan also includes publishing "good news" acquisition articles in operational career field publications. Other initiatives being considered include the following:

- Have program, project, and product managers (PMs) and Army Training and Doctrine Command (TRADOC) systems managers (TSMs) host and visit brigade and battalion commanders who use their systems;
- Establish a collaborative, Web-based environment for PMs, TSMs, and warfighters;
- Develop "greening" assignments for civilian acquisition workforce members;

• Develop a DACM briefing campaign for presentation *outside* the acquisition community; and

• Invite brigade and battalion commanders to conferences promoting the AAC and its systems.

Provide the workforce a clearly defined environment that encourages and offers career opportunities and leader development at all levels. The workforce requires education, experience, and training opportunities to maintain its competitive edge in developing state-of-the-art systems and providing services to warfighters. People are the most critical resource of our workforce. As such, workforce personnel must stay abreast of technological advances and laws and regulations that govern the acquisition process.

Acquisition workforce personnel must have current skills, and they must be afforded career-broadening opportunities that will enable them to adapt to transformation challenges. In addition, personnel must be innovative because they are required to mature and quickly integrate technologies. Finally, the acquisition community must groom the best individuals to assume key leadership positions within the Army. Our workforce must not be sold short—the return on any investment in its people will be considerable. As such, existing career-broadening programs must be assessed, new ones considered, and financial resources secured. The following initiatives are being considered:

• Implementing a task force to consider establishing a formal civilian PM model; developing post-utilization programs for PMs, Senior Service College (SSC) graduates, and individuals on long-term training; and developing initiatives to increase the civilian PM selection rate;

• Securing funding for the necessary education, training, and experience opportunities;

• Developing Intermediate Learning Education (ILE) and Qualification courses (Q-course);

• Evaluating career patterns for AAC officers;

• Conducting enlisted assimilation; and

• Continuing to improve the Competitive Development Group (CDG) Program.

Develop a technically competent acquisition workforce that is responsive to the current and future needs of the Army's transformation. The Army transformation represents the strategic transition from Cold War designs to preparing for the new millennium. The Army is transforming to become strategically responsive and dominant across the full spectrum of military operations. Transformation is about more than technology; it's also about training the workforce and developing leaders who are agile, versatile, and adaptive.

The Interim Force bridges an operational gap that has existed since the end of the Cold War and lays the doctrinal foundation for the Objective Force. The Army is transforming itself to meet the requirements of today and the future—a long-term process that will change its culture. Subsequently, initiatives must attract the talent, provide the training, and develop the leaders required to achieve a successful transformation. Initiatives being considered include:

• Partnering with OSD to develop recruitment, hiring, and retention strategies and initiatives;

• Identifying Objective Force and other high-profile developmental assignments;

• Pursuing or continuing advanced education and training opportunities such as SSC Fellowships, Training With Industry, Naval Postgraduate School, and Ph.D. programs;

• Leveraging opportunities to recognize and reward personnel accomplishments in support of the Army's transformation; and

• Expanding the Acquisition Personnel Demonstration Project, and aligning with OSD to create a new, single acquisition personnel system for all DOD personnel.

How You Can Help

Everyone plays a role in ensuring that workforce personnel are provided the right education, training, and experience opportunities to support the warfighter. From the Army's leadership to the individual workforce member, everyone plays a critical role in our workforce's transformation. Thus, personnel must leverage opportunities to strengthen relationships with the warfighter, seek opportunities to promote the workforce and communicate its role in equipping the force, encourage and offer career opportunities and leadership development at all levels, and be aware of the workforce's role in transformation and the war on terrorism.

The Army's Acquisition Workforce Campaign Plan is a strategic vision of how the workforce must transform. Personnel must be committed to developing tomorrow's leaders, maintaining relevance, establishing the acquisition community as the premier place to work, and evolving to support the war on terrorism and enable Army transformation.

The Army's Acquisition Workforce Campaign Plan is a living document, and any comments you may have are welcome. The plan will be available in the future on the Acquisition Support Center (ASC) home page at **http://asc.rdaisa.army.mil/**. For further information, contact Ross Guckert, Acquisition Support Center, at (703) 704-0129 or at **ross.guckert@us.army.mil**.

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Take The Challenge . . .

PM WORKSHOP HIGHLIGHTS CIVILIAN PARTICIPATION

Sandra R. Marks

Introduction

Serving as a program, project, or product manager (PM) and understanding the PM board process were two of the key issues addressed as the National Capital Region (NCR) hosted the Army Acquisition PM Workshop on Aug. 27, 2002, at Fort Belvoir, VA. This was the second of three regionally sponsored PM workshops. The Southern and Western Regions hosted one on Aug. 12, 2002, and the Northeast and Central Regions hosted another on Sept. 4, 2002.

The theme of this workshop was "The World Of A PM And How To Become One." The workshop provided an opportunity for PMs past and present to share their experiences with the approximately 120 predominantly civilian employees and other military personnel in attendance and to specifically motivate civilian personnel to compete for PM positions. It also gave those who administer the PM application process the opportunity to explain how the board process works.

PM Perspectives

NCR Director Sandy Long welcomed participants and gave opening remarks. She was followed by Director of the Acquisition Support Center (ASC) and Deputy Director for Acquisition Career Management COL Mary Fuller who provided a workshop overview. As a former project manager herself, Fuller stressed that being a PM is not an easy job and is not for everyone. "It's a different environment, but an exciting environment," said Fuller. "It's a commitment," she added, "and the payoff is an opportunity to make a difference." Continuing her remarks, Fuller listed the following current ASC initiatives: the Post-Utilization Taskforce, which is addressing issues affecting PMs, and the Army Acquisition Workforce Campaign Plan, which will serve as a living document for Acquisition Corps personnel to focus on precise efforts and resources. Fuller concluded by inviting prospective PMs to "take the challenge."

COL(P) James R. Moran, Program Executive Officer (PEO), Soldier, called his former assignment—which was as a PM—"the most challenging and fun assignment of my career." Moran shared his former PM experiences and emphasized the unique challenges future PMs will face because of the abundance of available technology to potential adversaries. Today's PMs, Moran stated, are entering the field at a unique moment in history because of the Army transformation. This effort, stated Moran, will greatly change the Army's basic fighting units. As a PEO, he expects PMs to effectively manage their programs, focus on the details, lead, and ensure they have a convincing case to garner support for their program.

Moran was followed by Gary Winkler, Project Manager, Transportation Coordinators'- Automated Information for Movements System II (TC-AIMS II). Winkler used his past PM board experience to discuss the skills necessary to become a PM. Using the Acquisition Career Development Model to illustrate his points, Winkler encouraged prospective PMs to first gain expertise in a single acquisition career field. This, he said, should be followed by building cross-functional and leadership competencies through education, training, and experience, and by applying those acquired leadership and functional competencies in key leadership positions through lateral or developmental assignments. Winkler also suggested that prospective PMs "be as competent as they can in as many career fields as they can." Good PMs, he concluded, will always be in demand long after their PM tour of duty ends.

Kevin Carroll, PEO, Enterprise Information Systems (EIS), spoke about the benefits of being a PM. Among the professional benefits he cited were the cost, schedule performance, and sustainment responsibilities, and the chance to have a direct impact on the Army's mission. Carroll added that individuals can substantially improve their skill level and their leadership and decisionmaking abilities by being a PM. He also noted that it's very exciting and great fun! The reasons why people don't apply for PM positions, he concluded, are fear of the process, the misconception that military personnel are favored over civilians, and mobility issues.

Ann Scotti, Product Manager, Automatic Identification Technology (AIT), and a member of the Competitive Development Group (CDG) Year Group 97, concluded the morning's sessions by discussing the history and general purpose of the CDG Program. She shared her personal experiences and spoke about the individual benefits of the CDG Program and how the program helped her compete and be selected for a PM position.

Scotti conveyed several of the major benefits the Army and the soldier derive from the CDG Program. For example, by making a clearly recognized and substantial investment in its future leadership through educational and training opportunities, the Army retains a higher skilled workforce for longer periods of time. This ultimately benefits the warfighter. Another benefit is "personal gratification," she added, individually and as part of a team. This results from career advancement, relationships with colleagues, program

execution, and knowing that you're supporting our warfighters worldwide. Scotti encouraged those seeking a challenge, career progression, increased responsibilities, and a unique opportunity to make a difference in the "Army of One" to apply for the program.

Taskforce

Henry Jehan, PM Post-Utilization Taskforce Leader and former Project Manager, Military Satellite Communications (MILSATCOM), PEO, Command, Control and Communications Tactical, began the afternoon sessions with an overview and update on the taskforce. He characterized his former project manager assignment as "the best job in the Army!" "Being a PM is like no other job that you will ever have as a civilian employee," he stressed. Citing the experience of numerous other former project managers, Jehan noted that unfortunately he also did not have an equally or more responsible assignment awaiting him following his PM tour. In fact, this was the driving force issue resulting in formation of a taskforce to address concerns raised by former and current PMs and the DA staff. Jehan was chosen to lead the taskforce by Army Acquisition Executive Claude M. Bolton Jr.

Jehan stated that thus far the taskforce has identified 14 concerns. They include an unclear and inconsistent mobility policy, lack of financial incentives, and a lack of understanding of the boarding process. Solution definition and implementation was ongoing as of this writing. Jehan concluded his remarks with some personal observations from the two PM selection boards on which he served. "The board process works, it is a mature process, it's a fair process, and it is a consistent process," he said. One of the more important pieces of advice he offered applicants was to tell them to discuss accomplishments rather than responsibilities in their resume. "The board is looking for the right accomplishments, the right experience, and the right training," Jehan advised.

Feedback Session

Special guest LTG John S. Caldwell Jr., Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics and Technology, and Director, Army Acquisition Corps, fielded questions from the audience on some of the concerns facing current PMs. He said at the outset that this is the most exciting time in the acquisition area in the last 25-30 years, adding that the Army is going to require a great deal. To respond to this, Caldwell emphasized that heavy investments have been made in both the civilian and military acquisition workforce and acquisition corps. Additionally, he said that "we must take advantage of every opportunity to better ourselves and to get close to the warfighter." He specifically referred to PMs and PEOs as "operators who make things happen." Said he: "There is no job or career field in the Army where you can get more personal and professional satisfaction than delivering capabilities to those who need them." Caldwell answered questions on such topics as post-utilization, developing leaders via the PM selection process, and military selection rates.

LTG John S. Caldwell Jr.

Board Process

The day's formal sessions concluded with a briefing by Catheryn Johnston, Personnel Management Specialist at the U.S. Total Army Personnel Command's Acquisition Management Branch. Johnston described the application process, the contents of a board file, and gave an in-depth description of how to fill out an Acquisition Career Record Brief. She also gave pointers on presenting a forceful résumé and writing effective entries on both the performance evaluation and the Senior Rater Potential Evaluation. In addition, she walked the attendees through the board process including board composition, the board member pre-brief, and the voting procedure. She concluded with comments about regionalization and fielded questions from the audience.

Conclusion

In closing remarks, NCR Director Sandy Long called the day's sessions highly beneficial and requested feedback for future workshops. She urged those considering applying to a board to meet with their acquisition career managers who can help them make an application package more competitive.

SANDRA R. MARKS, an employee of Science Applications International Corp. (SAIC), provides contract support to the Army AL&T magazine staff. She has a B.S. in journalism from the University of Maryland, College Park.

ASAALT PROVIDES WARFIGHTERS REAL-TIME SUPPORT

COL Terry Mathews and
COL Michael E. Mergens

Introduction

"An AH-64 has crash-landed in the CJTF-180 AOR [area of responsibility]."

With the receipt of this message, the Crisis Action Team (CAT) in the Army Operations Center (AOC) springs into action. As the various staff representatives begin to piece together information about the incident, the Logistics Operation Center (LOC) representative contacts the LOC and begins a series of actions that will lead to a coordinated effort to assist the unit in the field. The Medical Liaison Officer (LNO) determines the status of the injuries to the pilots and assists in arranging their evacuation to Germany for further evaluation and recovery.

The LOC Officer-In-Charge, working with the Sustainment and Aviation LNOs, determines where a potential replacement for the AH-64 is located. In the meantime, the Transportation LNO assesses the availability of the transportation assets to move a replacement helicopter to the AOR. And finally, the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (OASAALT) LNO begins working with the Department of the Army Systems Coordinator (DASC) for Apache helicopters and the Program Executive Officer (PEO), Aviation, to evaluate the contractor's AH-64 production plan and ensure that future fielding will meet the needs of warfighters.

The above scenario is an example of actions that occur numerous times during the day in the life of the LOC, as our soldiers engage potential worldwide threats in support of Operation Enduring Freedom and Operation Noble Eagle. In the LOC, OASAALT personnel, with the assistance of the DASCs, program managers (PMs), and PEOs, dedicate themselves to procuring, fielding, and coordinating the delivery of those items that provide our soldiers a formidable advantage on the battlefield.

Full-Time Operation

As previously stated, the LOC is collocated with the CAT in the AOC, which is located in the Pentagon. The LOC is a full-time operation that is manned at a minimal level during peacetime. However, the events of September 11, 2001, changed that. Immediately following the attack on the Pentagon, the CAT was activated and the LOC fully staffed. Most of the other sections represented in the LOC (e.g., force projection, sustainment, and medical logistics) filled their personnel requirements with individual mobilization augmentees (IMAs). These IMAs are available for emergencies such as that experienced on September 11. In contrast, the OASAALT initially filled its LOC position with Active duty officers on a rotational basis from its organization in the Pentagon.

Frontline Interface

In the normal course of resolving daily issues, the OASAALT LNO provides the frontline interface with the staffs of the Army G-3, Army G-4, and Army G-8 as well as the combat units in the AOR. The LNO handles requests from the various agencies or units for items that are in the development or fielding process. The LNO also determines if an item is available in the timeframe requested by the agency or unit. The OASAALT leadership recognized that the original staffing process that rotated Active duty officers was less than optimal because it did not represent the Army acquisition community with continuity.

Just prior to the initiation of Operation Anaconda, OASAALT leaders determined if an OASAALT IMA was available to fill the OASAALT LNO position in the LOC. COL Terry Mathews (co-author of this article), a Drilling IMA from the OASAALT-Army Tactical Operations Center (ARTOC) organization, agreed to fill this important role. As Operation Enduring Freedom and Operation Noble Eagle progressed, the OASAALT concluded that another LNO would be needed for two reasons: to provide 24-hour continuous coverage within the LOC, and because operations would most likely extend beyond Mathews' initial 1-year mobilization period. Thus,

COL Michael Mergens (co-author of this article), another ARTOC IMA, was approached and subsequently mobilized in June 2002.

Operating Procedures

Immediately after mobilization, Mathews defined the procedures for resolving requests and taskers given to the OASAALT LNO and incorporated them into a standard operating procedure as follows:

- The OASAALT LNO makes initial contact to clarify the warfighter's issue or requirement.
- The LNO provides the request to the Army G-3, Department of the Army Military Operations ((DAMO)-Force Modernization) to determine if the warfighter's request is valid and to the Army G-8, Programming (DAMO-Force Development) to determine how the request will be funded.
- The LNO informs the appropriate DASC or PM to assist the G-3 or G-8 as required.
- The LNO ensures the DASC and PM work together to bring the warfighter's request to an acceptable conclusion.

Teamwork Example

The replacement and return of potentially defective small arms protective insert (SAPI) plates provides one of the best examples of the teamwork required to implement the procedure. SAPI plates are the key components of interceptor body armor (IBA), the next generation of body armor that is currently being fielded. The plates are made of a ceramic material with much higher stopping power than the current "flak vests" made with Kevlar. An IBA consists of an outer tactical vest and two SAPI plates.

The replacement and return of the potentially defective SAPI plates began when PM, Soldier received test results that indicated certain lots had failed. There was an immediate concern that potentially defective plates had been issued to troops in the field. The CAT levied a requirement, in the form of a tasker, for the OASAALT to coordinate the location, collection, and return of the potentially defective plates to the San Joaquin Army Depot. The OASAALT's DASC and PM, Soldier quickly identified the location of potentially defective plates issued to our soldiers in the field. When it was determined that most of the potentially defective SAPI plates had been issued to the 101st Air Assault Division (AAD) in Afghanistan, this action received congressional and senior Army leadership attention.

The DASC and PM reasoned that the initial solution should be to immediately ship replacement SAPI plates to the 101st AAD. The depots were notified to prepare replacement plates for shipment and, with the assistance of the LOC Force Projection and Distribution Team, the 101st AAD received their replacements within days.

The next action the DASC and PM needed to implement was the return of the potentially defective SAPI plates to the San Joaquin Depot. The OASAALT LNO assisted the DASC and PM by publishing an official HQDA message stating the procedures that should be used to return the affected SAPI plates. Again with the help of the LOC Force Projection and Distribution Team, the OASAALT LNO, DASC, and PM tracked the return of the SAPI plates to CONUS. The teamwork demonstrated by all those involved in the solution of this issue is an example of the kind of real-time, real-world support the OASAALT team provides to soldiers in the field.

Conclusion

As stated earlier, the OASAALT LNOs are Reserve officers mobilized specifically to represent the OASAALT in the AOC. Mathews and Mergens are proof that the OASAALT has fully embraced the concept of "One Army." The OASAALT's career officers and civilians unhesitatingly and professionally accepted these Reserve officers as equals. Both Mathews and Mergens agree that the opportunity to work with the OASAALT's military and civilian workforce has been very gratifying.

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COL MICHAEL E. MERGENS, in his civilian position, is a Project Manager at Johnson Engineering. His team engineers mock-ups, trainers, and flight equipment for NASA's Space Shuttle and International Space Station. He has a B.S. in mechanical engineering from Texas A&M University and an M.S. in engineering management from the University of Houston.

An Empirical Approach . . .

THE FINANCIAL IMPLICATIONS OF READINESS

Dr. Dan Belk and
COL William Gavora

Introduction

When considering changes in Army logistics, both costs and benefits should be assessed. The Army has a great deal of experience and expertise at estimating costs and assessing benefits in terms of performance, effectiveness, and readiness, but the financial impact of such benefits is much more difficult to assess. It is intuitive that a higher readiness level is better than a lower one, but is there an empirical approach to estimating dollar implications in small changes of readiness level? With respect to benefit, the recognized measure of effectiveness for logistics is unit operational readiness rates.

The Defense Acquisition University defines readiness as a state of preparation (measured against a set of criteria) of forces or systems to meet a mission; thus, it seems useful to translate readiness levels into a dollar value to compare with costs.

Cost Estimating

Personnel in the Scout/Attack Helicopters Product Management Office (PMO) (within the Program Executive Office (PEO), Aviation) recently faced a decision regarding how test equipment should be allocated within Army aviation units containing OH-58D Kiowa Warrior helicopters. To evaluate potential alternatives, associated cost and benefits had to be considered and compared, and then expressed as a standard unit of measure (i.e., in dollars). PMO personnel took an innovative approach to this problem.

After each aircraft in the Kiowa Warrior fleet was identified, the units in which they operate were "costed" using the Army Force and Organization Cost Estimating System (FORCES) model. FORCES, an accredited force-costing tool introduced in 1990, is maintained by the U.S. Army Cost and Economic Analysis Center. It provides an engineering estimate of the costs to acquire and maintain units listed in the current year HQDA Structure and Manpower Authorization System (SAMAS) database. SAMAS serves as the force development database that records the authorized level of manpower and force structure for the Army. As part of the Total Army Analysis (TAA) process, it is indicative of what Congress, the Pentagon, and Army leadership have collectively set as the proper mix of combined arms units. That is, over multiple cycles, decisionmakers have reached consensus that the TAA represents optimum mix of units available given the budget available.

Cost Data

Life-cycle costs, normally measured in dollars, were gathered from PMO estimates, Army military-civilian cost system personnel costs, U.S. Army Aviation and Missile Command support contracts, Army cost databases, etc., for each alternative under consideration. These costs were then presented to decisionmakers for use in constant, current, and discounted dollars. Because FORCES estimates the annual cost of all units within the Army, it will implicitly indicate how much our leadership is willing to spend to maintain the status quo. If this were not true, there would be an adjustment made shifting funds to another, more effective mix of weapon systems.

If we assume that Army aviation units maintain a readiness level of 90 percent, each percentage point of degradation would indicate a movement away from "goodness," and fewer aviation assets would be available for immediate use. While it is naive to assume a linear cost relationship between zero and 100 percent, over small variations in readiness (for instance, 90 percent up to 92 percent; or 90 percent down to 88 percent), it seems reasonable to use a linear cost/readiness relationship to get a sense of the cost impact of small changes in readiness level. The reader should understand that this linear relationship is simply an approximation, and further study regarding the shape of the cost/readiness curve is warranted prior to any budgetary decisions. Given this assumption, each percentage point of readiness with respect to the Kiowa Warrior fleet would represent approximately a $7 million investment in readiness.

Conclusion

By using the FORCES tool, analysts equated each alternative's life-cycle cost to an equivalent indicated change in readiness. This allowed the decisionmaker to evaluate alternatives. Assessment using the judgments of subject matter experts revealed the best alternative, thus saving the PMO from a time-consuming and costly effectiveness study.

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COL WILLIAM GAVORA is Commander of the Army Aviation Applied Technology Directorate, Fort Eustis, VA. He recently completed service within PEO, Aviation as PM, Scout/Attack Helicopters and Acting Project Manager, Aviation Systems. A member of the Army Aviation Branch and Army Acquisition Corps, Gavora holds a B.S. in transportation from Arizona State University, an M.B.A. from Golden Gate University, and is a graduate of the Army Command and General Staff College and Advanced Program Management Course.

New Direction And Opportunities For The Army . . .

GROUND-BASED MIDCOURSE DEFENSE

CPT Mitch Stevison

Introduction

The Army's transformation and the associated debates surrounding transformation are widely publicized in today's Defense and business periodicals. However, little is discussed about the Army's transforming role in missile defense. As technologies mature, the vision of an integrated Ballistic Missile Defense System (BMDS) becomes clearer, and the Army's successful transformation of this vision into a reality will largely rely on the role it plays in the Ground-Based Midcourse Defense (GMD) Program.

The GMD Program mission is to develop and build the initial parts of the BMDS test bed by Sept. 30, 2004, providing a robust capability to test GMD components and the backbone for future testing of BMDS elements. The test bed encompasses the northern two-thirds of the Pacific Ocean, with test infrastructure in California, Colorado, Alabama, Hawaii, several locations in Alaska, the Ronald Reagan Ballistic Missile Defense Test Site on U.S. Army Kwajalein Atoll, and the Republic of the Marshall Islands. Additional airborne and seaborne platforms will also be used and will include a 14-story tall X-band radar mounted on a sea-based platform.

The GMD Joint Program Office, headed by Program Director BG(P) John W. Holly, has the authority and responsibility to manage this joint-Service, multibillion dollar program. Of 10 joint positions heading GMD component and directorate offices, 6 are Army—2 of which are brigade command equivalents. The Army is also fulfilling its historical role, with the U.S. Army Corps of Engineers managing much of the construction, the Reagan Test Site on Kwajalein Atoll providing test range support, the U.S. Army Space and Missile Defense Command providing basing and force protection, and the Army providing the forces to support the fielding of emergency capabilities if necessary. GMD is a leading technology initiative for the Army and DOD. In the last fiscal year, more than $3.2 billion of joint Office of the Secretary of Defense funding was allocated to the GMD Program under a capabilities-based effort focused on delivering a prototype test bed to defend America against ballistic missile attack.

Background

Rogue nations and states that support terrorism are intent on developing missiles capable of delivering weapons of mass destruction to threaten the United States, our deployed forces, and our friends and allies. Our Nation currently has no defense against long-range ballistic missile attacks. Our early warning satellites and radars would inform us of an attack we could not defeat. Damage to the American populace and infrastructure from nuclear, biological, or chemical payloads would be devastating—far more deadly than the attacks of September 11, 2001.

Effective Defense

An effective missile defense system is our Nation's best insurance policy against accidental, unauthorized, or deliberate ballistic missile attack. Such a system would act as a deterrent by reducing the strategic value of long-range missiles and an aggressor's will to acquire them. Ever since V-1 flying bombs were launched toward London in 1944, the U.S. Army has been called on to defend against missile threats. Today, the Army continues to play a prominent role in the development, production, and fielding of missile defense systems.

Our Nation's leaders are committed to making ballistic missile defense a reality. On July 22, 1999, then President William J. Clinton signed into law the National Missile Defense Act of 1999 that states, "It is the policy of the United States to deploy as soon as is technologically possible an effective National Missile Defense system capable of defending the territory of the United States against limited ballistic missile attack." President George W. Bush reaffirmed this commitment in his 2002 State of the Union Address.

In January 2002, Secretary of Defense Donald R. Rumsfeld converted the Ballistic Missile Defense Organization into the Missile Defense Agency (MDA), with a charter to develop a BMDS to defend against all ranges of ballistic missile threats. The BMDS will employ layered systems with integrated architectures capable of intercepting enemy missiles at multiple opportunities during a threat missile's trajectory. The three phases of flight include the boost phase, or during the missile's ascent; the midcourse phase, in which the missile is traveling outside the earth's atmosphere; and the terminal phase, in which the missile warhead is re-entering the atmosphere toward its target. The MDA is currently evaluating numerous technologies for defeating enemy missiles in each phase.

The Challenge

The technology and planning for GMD is the most mature of the MDA's midcourse Defense programs. The GMD Program has already demonstrated great potential to deliver effective protection for all 50 states. Unlike earlier missile defense systems that used

explosive warheads to destroy their targets, GMD uses hit-to-kill interceptors that collide with their targets at extremely high speeds, using kinetic energy to destroy the target's payload. These intercepts are often compared to "hitting a bullet with a bullet," an analogy that does not do justice to the achievement of the actual physics involved. In a GMD engagement, the threat warhead and the hit-to-kill interceptor reach closing velocities near 15,000 mph. Added countermeasures and decoys around the target warhead make the interceptor's job of colliding with the correct object more difficult.

Until recently, skeptics have dismissed hit-to-kill as impossible because of the complexity in achieving these high-speed, metal-on-metal intercepts. Critics accused missile defense program advocates of being overly ambitious and of throwing money at unreachable technologies. However, in recent years, the Army's theater missile defense programs, i.e., PATRIOT Advanced Capability (PAC)-3 and Theater High Altitude Area Defense (THAAD), have routinely achieved hit-to-kill test intercepts. Since October 1999, GMD has achieved four successful hit-to-kill intercepts (in six attempts) of mock enemy warheads in long-range midcourse scenarios, including three straight hits in the last three tests. These successes validate the fundamental technology and provide a solid foundation for future GMD development and testing.

New Strategic Era

A few weeks before Secretary Rumsfeld's restructuring of the MDA, the President announced the Nation's intention to withdraw from the 1972 Anti-Ballistic Missile (ABM) Treaty. This treaty had prohibited testing and deployment of comprehensive missile defenses. Under the ABM Treaty, GMD's flight test engagements had been limited to a single test configuration, and all performance predictions had to be derived from modeling and simulation extrapolation.

On June 15, 2002, 2 days after the official withdrawal from the ABM Treaty, construction began on the test bed. Shovel in hand, Sen. Ted Stevens (R-AK) joined LTG Ronald T. Kadish, USAF, MDA Director; LTG Joe Cosumano, Commanding General, U.S. Army Space and Missile Defense Command; BG(P) John W. Holly, Program Director of the GMD Joint Program Office; and other dignitaries in the official groundbreaking at Fort Greely, AK. With a scoop and a toss of the earth, the United States entered a new strategic era in which we are free to develop and test effective defenses against ballistic missile attacks.

A payload launch vehicle carries a hit-to-kill interceptor on its way to another successful target intercept.

Expanded Testing

Freed from the terms of the ABM treaty, GMD Program developers now have the flexibility to expand the GMD Program test envelope, perform extensive experimentation—including additional sensors such as Aegis cruisers or a THAAD radar—and stress its system elements. Multiple test configurations are now possible, and new technologies can be inserted soon after they become available. GMD will sequentially increase target complexity, building more confidence in the overall system by using more variables for impact angles and velocities. The test bed will validate the GMD operational concept through operationally realistic testing and operational prototypes of future GMD components. The GMD technology development program will continue to feed improvements to the test bed over time via block upgrades.

Today, Army COL Kevin Norgaard, the GMD Alaskan Site Activation Commander, is orchestrating a flurry of activities at Fort Greely. Test bed facilities under construction include an in-flight interceptor communications system data terminal, a battle management command and control node, and six silos to house interceptor missiles. Activities at Fort Greely will validate arctic site preparation and construction techniques; refine logistics, maintenance, and training procedures; and analyze the functional capabilities of complex systems under realistic conditions. One of the most important specialty tests GMD will perform in Alaska will be conducted on the Ground-Based Interceptor. The interceptor will be constructed, transported, and inprocessed at the test site and subsequently emplaced in a silo. It will require routine, day-to-day maintenance and training operations as part of a full-up testing system.

While GMD is building an extended test bed, not deploying an operational missile defense system, test bed components could be activated for use in an emergency to protect our Nation from ballistic missile attack.

Summary

Though no single system or Service can defend the United States, our deployed forces overseas, and our friends and allies against the full spectrum of missile threats, the Army has a long legacy of fielding effective missile defense systems. This legacy will continue with the eventual success of the GMD element of BMDS. As the lead Service for the GMD Program, the Army is playing a key role in development and later production of this critical component of homeland defense.

CPT MITCH STEVISON is the Kwajalein Test Director for Space Operations, Ronald Reagan Test Site, U.S. Army Kwajalein Atoll. He recently transitioned from the Ground-Based Midcourse Defense Joint Program Office in Huntsville, AL.

A Personal Perspective . . .

THE SSCF AND MSSTC PROGRAMS AT UT-AUSTIN

Jimmy C. Hill

Introduction

If your goal is to get some exposure to a variety of strategic-level, Army-related topics, and you desire interface with some of the Army's senior leaders while decompressing after your last assignment, then taking the Senior Service College Fellowship (SSCF) Program at the University of Texas-Austin (UT-Austin) is for you. If your goal is to get a master's degree and learn more about the corporate world with which we have to interact in our regular jobs, then the Master of Science in Science and Technology Commercialization (MSSTC) Program at UT-Austin is a good bet. Pursuing both programs concurrently offers a significantly enhanced learning experience; however, it requires a considerable amount of personal dedication and commitment and does not allow much time for decompressing or personal time.

SSCF Program

The SSCF Program is 10 months long. It begins in August and ends with graduation in May of each year. The program offers senior lieutenant colonels/colonels and GS-14/15 (or equivalent personnel demonstration broadband level) civilians the opportunity to complete the Army's highest level of military education, equivalent to that granted from the Army War College designated as Military Education Level 1. The academic focus is a study of the relationships among national security policies and processes, emerging technologies of interest to the Army, and the industrial policy and base. The curriculum affords students an opportunity to participate in a well-organized training program that provides and broadens senior leadership perspectives on important Army strategic-level topics such as leadership, warfighting, lessons learned, organization, and structure.

Throughout the year, students have the opportunity at UT-Austin to audit classes that fall into their areas of interest. Also, a wide range of guest speakers are brought in who are primarily general officers, members of the Senior Executive Service, or resident senior-level faculty at The University of Texas' Institute for Advanced Technology. The small class size permits one-on-one interaction with the guest speakers and the opportunity to discuss issues of interest to each student.

Field trips to such places as Fort Hood, TX, attendance at seminars, and visits to high-tech industries in the surrounding Austin area are interesting and informative. These visits typically include presentations by senior-level leaders who provide students with unique insights into current operations and planned activities.

Students are also given the opportunity to prepare a research paper on a topic of interest that, at the end of the year, is submitted to the Army War College, if military, or to the Acquisition Support Center—which reports to the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology—if civilian. This provides students with a unique opportunity to delve into a specific area of personal interest that has some applicability to a current Army or acquisition issue. The curriculum is purposely designed to provide ample time for the student to pursue other outside interests while participating in the SSCF Program. For many, this means

being able to catch up on some personal time with the family or decompressing from previous assignments.

MSSTC Program

This 12-month program ends in May of each year, which makes it possible to pursue this course of study concurrently with participation in the SSCF Program. The MSSTC Program is a rigorous academic program focused on giving students theory and practical experiences regarding how high-tech corporations really work to bring new technology from a concept stage into the marketplace. There is a heavy workload of individual and team deliverables required every 2 weeks including oral presentations, written reports, exams, and extensive reading assignments, and there are no semester breaks and very few holidays.

The majority of professors who teach this program have practical business experience including some who have started their own companies; therefore, the course of study is a combination of learning the theory and then putting it into practice through the assignments. Students get to work with high-tech inventions and learn what it takes to bring them to the marketplace. Throughout the year, significant emphasis is placed on learning what high-tech corporate "intrapreneurship" and entrepreneurship are all about, including how to perform technology assessments and how to market, finance, manage risk, and organize a new business venture for the greatest probability of success.

The MSSTC Program has a sister program that runs concurrently at the University of Adelaide in Australia. At the beginning of the school year, all in-class, online, Adelaide, and other foreign students from countries such as Mexico, Russia, Brazil, Taiwan, Singapore, and China attend an orientation where the overall program is explained, teams are organized, and some individual and team assessments are conducted. Each team is comprised of a mix of these students to participate as full-team members. This approach is designed to facilitate learning in a virtual team environment, which gives the program a definite international flavor to help students learn better what it takes to conduct business around the world and interface in other political and cultural environments. Some students take advantage of a one-time opportunity to go to Adelaide for 2 weeks to sit in on classes, interact with their Australian teammates, and investigate their selected technologies from an international perspective.

The demographics of the in-class students include a cross section of people from both the private and public sectors. Many of the students from the private sector either own their own businesses or work in high-tech corporations around the world. Public sector students have a different perspective, which greatly facilitates class discussion. In-class sessions are normally held every other Friday and Saturday in a global classroom where the students' laptops are connected to the UT network to facilitate in-class file exchanges and presentations. The global classroom is fitted with video teleconferencing (VTC) facilities, and all presentations are made using behind-the-screen projectors. Once a month, a VTC is conducted with the University of Adelaide. This usually involves guest lecturers either from Austin or Adelaide presenting information relevant to where the students are in the program.

Conclusion

The opportunity to attend the SSCF Program and/or the MSSTC Program at UT-Austin is definitely worth the time and effort required as they both provide excellent learning experiences and opportunities to pursue topics of personal interest. Both programs provide senior military personnel and civilians with unique opportunities to expand their knowledge base by gaining exposure to a variety of relevant Army and acquisition-related issues, the commercialization of high technology, and the operation of high-tech corporations. Individually, either of the programs is an excellent investment of time and effort, but taken together they provide a highly synergistic learning experience that leads to a significantly expanded view of the world we live in, both from military and industry perspectives. As previously pointed out, however, undertaking both programs concurrently requires a significant amount of individual commitment and leaves little time for personal activities.

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REAGAN TEST SITE ADOPTS RADAR OPEN SYSTEMS ARCHITECTURE

Stephen B. Rejto

Introduction

The Reagan Test Site (RTS) on the Kwajalein Atoll in the Marshall Islands has a suite of high-power precision instrumentation radars spanning the frequency spectrum from very high frequency (VHF) to W-band—about 100 gigahertz. These radars were developed from the ground up using proprietary hardware and software architectures. Because each radar's architecture and technology was unique, these radars proved difficult and costly to maintain and upgrade.

Radar open systems architecture (ROSA) implements the open-systems (OS) model by breaking down a radar into functional building blocks that are constructed using commercial off-the-shelf (COTS) hardware whenever possible. This breakdown provides loosely coupled operational subsystem components that are tied together using well-defined interfaces that form a complete radar-processing and control system. Building blocks can be easily added or modified to allow new technology insertion with minimal impact on the other elements of the radar system. By using common building blocks on all its radars, RTS now realizes a great savings in maintenance labor and minimizes the cost of its radar spares.

OS hardware and software components conform to formal interface specifications that are fully defined, publicly available, and maintained according to group consensus. The OS focus on decomposition and interfaces maximizes flexibility in developing and maintaining a system. A common OS example is the personal computer, which provides standard interfaces for disk drives, graphic cards, and peripherals. Customers can replace or upgrade PC components from a competitive marketplace based on performance and cost, independent of a specific vendor.

COTS

Another important aspect of an OS approach is maximizing the use of COTS technology to benefit from a competitive market and to change quickly to newer, better, and lower-cost components. Developing custom components that adhere to standard open interfaces is perfectly acceptable within an open system where custom components are required. Proprietary COTS components with closed interfaces cannot be part of an open system.

How is the OS approach relevant to large defense systems? For years, DOD was the major driver of electronic components used in weapon systems, allowing DOD to synchronize the modification or fabrication of new systems with new components. In today's market-driven electronic world, DOD has little control over electronic components that evolve every 18 months. It is increasingly difficult to build and maintain DOD systems, which have 8- to 15-year cycle times.

To benefit from new technology and cost reductions, DOD systems must be designed to accommodate the fast evolution of the commercial market. The use of OS components is the solution to bridging DOD with the commercial market and building cost-effective systems that can evolve over a lifetime and adapt to new threats.

ROSA

The ROSA model breaks down a radar's processing and control architecture into individual, loosely coupled subsystems. Each subsystem performs specific radar functions and can run autonomously. When combined, these building-block subsystems form the entire processing and control architecture for a complete radar.

Radar systems have historically employed tightly integrated designs, custom hardware, and proprietary interfaces. ROSA replaces this with intelligent subsystems for each major radar component. These radar peripherals perform all interface functions between the main computer and low-level radar electronics. This configuration provides an important level of abstraction that makes the software within the main computer largely independent of the underlying hardware. The software thus becomes very portable from radar to radar.

Communications The Key

Communication between the subsystem components and the main computer is key to the success of ROSA architecture. Subsystems act as software objects that perform specific functions based on control messages. Specifically, a high-level control message is passed from the main computer to the subsystems using a single commercial network interface.

With every major control cycle, the main computer broadcasts a

The ARPA Long Range Tracking and Instrumentation Radar, or ALTAIR, is one of four highly sophisticated radar systems at the Reagan Test Site being modernized with COTS equipment and software.

control message to all the subsystems, and each subsystem reads the message and performs the requested function. In essence, each subsystem becomes an intelligent peripheral that provides a unique function driven by control messages.

In addition to simplifying design, ROSA systems show benefits in the test and evaluation stage. First, the radar interfaces of each subsystem can often be built using widely available commercial boards that have already been tested by the manufacturer and are supplied along with diagnostic software. As a result, testing can start at the subsystem level instead of the component level, drastically improving the development cycle of the subsystem.

Second, the distributed architecture in a ROSA system provides a clean mechanism for testing individual subsystem components prior to integration. By providing intelligence within the individual subsystems, test and evaluation can be completed using a modular approach. Modular testing is accomplished by allowing each subsystem to generate its own control messages. During radar development and testing, subsystems generate and drive their own control message. This modular testing provides a very efficient use of resources and allows all subsystems to be developed and tested in parallel.

An antenna control subsystem (ACS) is another good example of ROSA's applicability. The ACS receives high-level azimuth and elevation pointing commands from the main radar computer and then does everything else. The main computer need not know the underlying antenna electronics or the details of the servo loops. All required information is passed back and forth between the ACS and the main computer using high-level messages.

ROSA modularity also provides control over specific sections of the radar without requiring the complete system. The autonomous nature of the subsystems also provides distributed fault isolation: subsystems are responsible for isolating faults within their section of the radar. The ACS can move the antenna, for example, while the transmitter control subsystem can transmit pulses into a dummy load while running in "local" mode.

Conclusion

ROSA has been used successfully in modernizing the radars at the Reagan Test Site. Modular open systems architecture leads to improvements in time-to-market, cost, technology refresh, and commonality across radar systems.

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Claude M. Bolton Jr.

YG03 Inducted, YG00 Graduates . . .

ASC HOSTS COMPETITIVE DEVELOPMENT GROUP ORIENTATION

Sandra R. Marks

The Competitive Development Group (CDG) Program was established in 1997 as a means to develop Army leaders with wide-ranging work and educational backgrounds. It was designed to broaden and reinforce leadership and management skills and to expand the acquisition experience of all its participants in a variety of fields. At this year's annual CDG Orientation, held Sept. 17-18, 2002, in Springfield, VA, and hosted by the Acquisition Support Center (ASC), 15 new members of Year Group (YG) 2003 were inducted into the program and 5 members of YG00 graduated from the program.

Introduction

Maria Holmes, CDG Manager, opened the orientation by congratulating YG03 and welcoming others in attendance. She introduced Craig A. Spisak, Deputy Director of the ASC, who presented an overview of what the ASC does, its mission and roles, and an ASC perspective on what is expected of CDG members. He outlined the ASC's role of managing the acquisition workforce and the Acquisition Corps and how the ASC provides a headquarters-type support function for the program executive offices.

Understanding the organizational structure, Spisak said, will help CDG members be "ambassadors" for the program as they develop future careers and leadership positions in the acquisition workforce. One of the keys to the program, Spisak said, is networking. Spisak stressed that CDG members have the opportunity while doing jobs and rotational assignments to establish a good reputation for themselves, the CDG Program, and their organization. "Networking and this program go hand-in-hand," he added. He urged the CDG participants to use the resources at their disposal.

ASC Briefings

Spisak was followed by a presentation on personnel actions, travel, and permanent change of station (PCS) status. Carolyn Creamer, Human Relations Specialist, Personnel Management Division, ASC, addressed issues such as support provided by both the Civilian Personnel Advisory Center and the Civilian Personnel Operations Center, the ASC's Table of Distribution and Allowances, requests for personnel action, timekeeping procedures, locator cards, and awards. She identified all the documents that CDG members need to bring onboard. Sherry Strelow, Program Analyst, Resource Management (RM) Division, ASC, outlined the numerous roles that the RM Division plays as the ASC's accountant and financial advisor. She specifically covered how to prepare PCS orders and provided travel-processing information.

LaVerne Kidd, representing the Regional Acquisition Support Center Customer Service offices, identified the three regional offices and their directors. She discussed the roles and responsibilities of the regional acquisition support centers and outlined some of the regional programs currently being offered. "We're dedicated and committed to working with the Army system to ensure that our AL&T [acquisition, logistics, and technology] workforce members possess the technical leadership and managerial skills needed for future career development," Kidd said. Kidd also identified the key roles of the regional directors: to help establish and implement policy and to oversee career development for their regions. She concluded her remarks with a discussion of the roles of the Acquisition Career Management Advocates (ACMAs)—senior-level Army Acquisition Corps (AAC) members located throughout regional organizations, who have been appointed to be responsive to command-specific issues.

Craig A. Spisak

LTC Peggy Carson

PERSCOM Briefings

LTC Peggy Carson, Chief of the U.S. Total Army Personnel Command's (PERSCOM's) Acquisition Management Branch (AMB), presented an overview of what AMB does at PERSCOM and how it responds to its chain of command. Carson introduced the Acquisition Career Managers (ACMs) who are assigned to PERSCOM. She focused her remarks on the board process and how AMB, from a broad standpoint, handles all selection boards for both military personnel and civilians. She also outlined the functions that AMB performs for both military personnel and civilians, urging CDG members to stay informed. She concluded by fielding questions on the board process, Acquisition Career Record Briefs (ACRBs), and the slating process.

Chandra Evans-Mitchell and Giselle Whitfield, both ACMs for the National Capital Region (NCR), gave presentations on ACM support—who the ACMs are and what they do. Evans-Mitchell reiterated how ACMs centrally manage CDG members by providing career counseling and guidance throughout their 3 years in the program and throughout their acquisition career. Whitfield concluded the briefing by walking CDG participants through the certification process and relaying key factors in becoming a successful CDG member.

Dinner Speaker

YG03 members and YG00 graduates were recognized for their participation in the program during a special recognition dinner. Claude M. Bolton Jr., Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) and Army Acquisition Executive (AAE), was the guest speaker. He applauded the inductees and graduates and focused his remarks on the Army transformation and how these future Army leaders will be influential in helping bring about change. It is important, Bolton said, that tomorrow's leaders embrace the concept of change. "Challenges are coming," Bolton added, "and people will be key to the success of the future Army."

Functional Representatives

The second day of the orientation began with 6 of 11 acquisition career field functional representatives providing comments as speakers for Functional Chief Representatives. On behalf of their specific organizations, they addressed the opportunities that CDG members have in those career fields. Tom Colangelo, Contracting Career Program Office, ASC, spoke about the contracting career field. He examined the difference between the old and

Larry Hill

new paradigms of the contracting field and described some of the developmental opportunities available throughout DOD.

Leon McCray, Associate Director, ITEC4, and a certifying official for manufacturing, production and quality assurance (MP&QA), advocated his career field as one that will expose the CDG participant to the entire acquisition spectrum—from input to the statement of work to industrial base management and disposal. Mort Anvari, U.S. Army Cost and Economic Analysis Center (CEAC) spoke about the field of cost analysis. Cost and economic analysis products and services, Anvari said, are essential and integral to the Army's financial management; decisionmaking; business management; and planning, programming, budgeting, and execution system (PPBES) processes.

Larry Hill, Director of the Integrated Logistics Support (ILS) Operations and Policy Directorate within the ASAALT ILS Office, discussed the acquisition logistics interface with other career fields and the Defense Acquisition University training required for certification in acquisition logistics and system sustainment management. Ned Kieloch, Deputy Director for Information Technology Management (ITM) Workforce Development, Office of the Army Chief Information Officer (CIO)/G-6, talked about the information technology (IT) career program and reasons why CDGs might want to pursue it and some educational, training, and developmental opportunities available through the Army leader development programs. Larry D. Leiby, Deputy Director for Test and Evaluation (T&E) Policy, U.S. Army Test and Evaluation Management Agency (TEMA), and a certifying official for T&E, concluded with an overview of the T&E acquisition career field, its structure within the Army, and the T&E process.

Panel Discussion

A panel of former CDG members convened to share their past experiences and to relate how the CDG Program has influenced their present careers. Maria Holmes, YG98, moderated the panel, which included Dave Bundy, YG00; Bernard Gajkowski, YG01; Steve Tkac, YG01; Jean Matlock, YG97; Deborah Chambers, YG01; and Ross Guckert, YG01. Panel members answered questions such as what advice do they have for new CDG members, what would they change in the CDG Program, how do they promote the program within their current organization, and which developmental assignments were most beneficial. Panel members were very helpful in providing new CDG members insight into what they might expect. Gajkowski highly recommended leadership training he received at the National Training Center in Fort Irwin, CA. Said he: "It's a great way to view the results of the outstanding work of the acquisition community and the positive feedback from the soldier about the acquisition community."

Personnel Demo

The orientation concluded with a training session on the DOD Civilian Acquisition Workforce Personnel Demonstration (AcqDemo) Project. Jerry Lee, a Senior Analyst with Science Applications International Corp. (SAIC), and Jael Lathem, Analyst, SAIC, who both support the ASC relative to implementation of the AcqDemo project, discussed topics such as career paths and broadband levels, transitioning into and converting out of the AcqDemo Project, and the Contribution-based Compensation and Appraisal System (CCAS) evaluation standards. Throughout the presentation, Lee and Latham fielded questions from the YG03 members, many of whom were new to the concept.

Conclusion

In closing remarks, Holmes termed the orientation an outstanding success and wished CDG YG03 members the best in their future endeavors.

SANDRA R. MARKS, an employee of SAIC, provides contract support to the staff of Army AL&T magazine. She has a B.S. in journalism from the University of Maryland, College Park.

THE ARMY INFORMATION TECHNOLOGY PLANNING PROCESS

LTC Kathleen Swacina

"The next war will not be fought with guns, but with computers in offices."

-Rep. Sherwood Boehlert (R-NY)

"The role information technology will play is a considerable one."

-Tom Ridge, Director
Office of Homeland Defense

Introduction

DOD's vision for information technology (IT) was stated in October 1999 in the DOD Information Management (IM) Strategic Plan: "Information superiority achieved through global, affordable, and timely access to reliable and accurate information for worldwide decisionmaking and operations." But how does the Army achieve this vision? The Army must find ways of bringing information services and technologies into operational and support missions. The Active Army, Reserve, and National Guard have different operational designs based on unique information needs. These three Army components must integrate their IT efforts to successfully achieve the DOD strategic vision.

Goals

To accomplish this vision, DOD established four major supporting goals.

• *Become a mission partner.* Integrate IM with the national Defense mission using joint mission planning and analysis processes as the basis for defining information service and performance requirements.

• *Provide services that satisfy customer information needs.* Respond to management direction and mission requirements by delivering quality, affordable products and services to IM/IT customers.

• *Reform IT management processes to increase efficiency and mission contribution.* Emphasize management process improvements that are needed to more effectively deliver information and services to DOD mission customers.

• *Ensure that DOD's vital information resources are secure and protected.* Reflect the pervasive impact of information assurance on DOD.

The DOD IT vision, mission, and goals were developed well before the September 11, 2001, terrorist attacks and they may not meet the current needs of the DOD and Army transformations efforts. A well-defined IT operations plan based on joint mission planning is the first critical step in realizing the vision.

Additionally, new technologies are needed to maximize the Army's resources. Only by properly planning, coordinating, and budgeting in a timely manner can the Army hope to achieve its ever-expanding missions at home and abroad. Also required is better understanding of how to link the Army's IM Plan to the Quadrennial Defense Review (QDR), the Joint Vision 2010 (JV2010), and the DOD IM Strategic Plan.

Further, there must be a shift in Army methodologies used to design and procure systems. In particular, developing timely and cohesive strategies for acquiring information systems is just as important as the strategies used to acquire other weapon systems.

It is also important to note that the Army Chief Information Officer is addressing a number of issues that will impact the Department of the Army (DA) IM plan. Among these are how recent QDR changes will drive changes to the DOD IM Strategic Plan and therefore the DA IM plan; how the formation of the Homeland Defense Office and the Northern Command will influence the IM plan; and how the DOD and DA restructuring efforts will impact the plan.

Resourcing

Aside from personnel and training, resourcing for IT is the Army's most costly investment. In the past, the lack of a cohesive IT operations plan made budgeting for the existing and newly proposed systems fragmented at best. With the increased concerns of homeland defense, the Army must develop a plan that defines how information systems will support core business processes. These information systems must be designed and procured in a timely manner, provide information rapidly, and contain intrusion safeguards.

A successful IM strategic plan will link the missions of the Army and subordinate commands with the DOD goals and objectives. This plan will result from the transformation and the expanding role of the Army in homeland defense. In its IM Strategic Plan, DOD outlines goals and objectives that provide overall guidance for managing information resources. The plan also establishes the DOD vision for IM, top goals and objectives, and strategies for accomplishing the goals.

Subdivision E of the 1996 Clinger-Cohen Act (CCA) mandates that the Army improve its day-to-day mission

processes and properly use IT to support those improvements. Technology must be fielded in an orderly, prompt, and efficient manner to realize this mandate. The Army must use streamlined acquisition processes, commercial off-the-shelf products and services, outsourcing, and partnering when appropriate, to take advantage of industry capabilities.

The IT investment portfolio concept, as put forth in the CCA, emphasizes the need to better prioritize IT capital investments and account for results. Accountability extends from the individual, to the mission commanders, and up through DOD to Congress. Keeping the Army military and civilian workforce trained in new technologies and improved processes is also critical to maintaining our fighting edge and achieving savings. Everyone is responsible for implementing management processes that streamline development and acquisition programs, keeping track of costs, and providing the best possible support for the Army's mission.

The Army must also continue to find better ways of bringing information services and technologies into operational and support missions. The Chief Information Office institutionalizes processes that reflect the full spirit and intent of the CCA. Senior DOD civilian and military managers understand that implementation will take time, and the Army must proceed without hesitation.

Army commands, the Defense Advanced Research Projects Agency, industry, and academia must collaborate to successfully transform the Army. The Joint Vision Plan (JV2010) implies that in the future, information will be as important on the battlefield as any weapon system. By partnering with DOD and private industry, the Army can expand its mission resource capability. To successfully implement seamless IT strategic planning, the Army must bridge the gap between present and future technological developments. In this way, technological opportunities can enhance the Army's strengths to accomplish any mission.

IT Integration

To achieve integrated IT planning and support, all organizational levels must understand and clearly communicate requirements. Only with a complete understanding of the mission can the Army successfully link operational strategy, goals, and objectives. Mission understanding is critical in developing the measures and overarching IT architecture that support and enable commanders to accomplish their mission.

Thus far, the Army has practiced a threat-based strategy, a practice that perpetuates "project creep" because of ever-changing requirements. As new leaders assume command responsibilities, the operational strategies change. New leaders champion their perception of the mission requirements and plan accordingly. Many technological projects fail because of reactive strategic planning and failure to align with the changing mission. Applying capability-based planning can provide the flexibility to plan and fund technology for better addressing operational and mission changes.

Army, National Guard, and Reserve efforts must be integrated to successfully realize the DOD strategic vision for IM. These three components have interdependent requirements and missions. However, their efforts to coordinate the design and procurement of IT systems have been incomplete. In the past, the Army might design and develop a system for an immediate mission need only to have the National Guard and Reserve scramble to modify the system for their particular mission requirements. This practice has perpetuated the "stovepipe" systems that currently hamper the entire Army. Starting with the initial planning of a new system, the Army, Reserve, and National Guard must represent and promote their specific component requirements.

Funding requirements from all three Army components should be packaged together for the program objective memorandum. Fielding plans must be well coordinated to ensure designated "round-out" units from the Guard and Reserve are provided the necessary systems to support the total Army mission. IT system life cycles should be standardized to allow better planning for the replacement of outdated systems and incorporation of the newest technology possible. Developing a timely and cohesive strategy for information systems fielding, security, and replacement is just as important as any other weapon system. This will also provide better overall information operations security.

Finally, all efforts are futile if information is not protected. Information Assurance (IA) is essential to integrate intelligence, command and control, and battlefield awareness functions into joint and combined operations. IA requires that individuals throughout the Army improve their understanding and awareness of information operations criticality, and the impact of inadequate IA posture on Defense missions. IA awareness and training must include all Army supporting agencies. Defining a secure perimeter by developing an integrated attack sensing and response management system is essential to achieve the IA concept.

Conclusion

If each DOD goal is examined and capability-based planning techniques are applied, as opposed to the traditional threat-based planning practiced since the 1980s, then cohesiveness to the fragmented process of IT strategic planning can be achieved. At the initiation of the planning process, resources can be programmed and directed to support each goal. The IM Strategic plan provides a road map for pursuing significant IT improvements that support the goals, objectives, strategies, and measures of the DOD Strategic Plan for years to come. Executing this plan requires total Army commitment to working together toward common goals.

LTC KATHLEEN SWACINA is an Active duty Reserve officer who was attending the Army War College Fellowship at the University of Texas in Austin when she wrote this article. She has 22 years experience in operations, force management, strength management, acquisition, and information technology fields. She received her B.S. from Western Michigan University and her master's in management of information systems from Webster University.

COMMON MISSILE QUALITY FUNCTION DEPLOYMENT APPLICATIONS

Jim Springer and Brooke Fambrough

Introduction

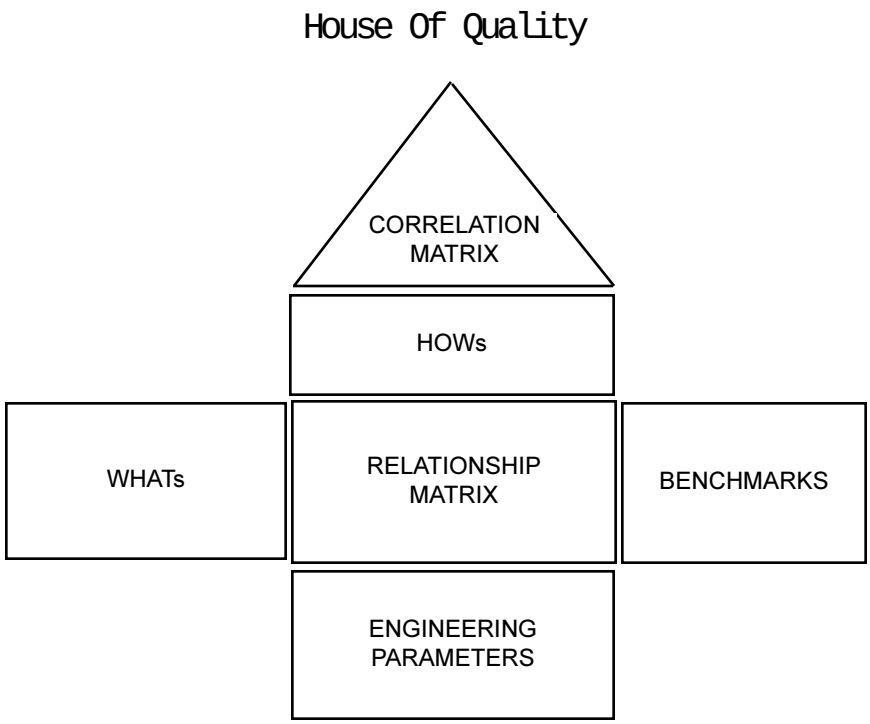
The Common Missile (CM) Project Office and its weapon system users (henceforth referred to in this article as "users") are applying a tailored quality function deployment (QFD), which will ultimately result in a better product for the soldier. In particular, QFD is to be used to assist in establishing system measures of effectiveness (MOEs) and measures of performance (MOPs), and to assist in linking system requirements to specific MOEs and MOPs. Fundamentally, however, the principle driver behind the CM Project Office's desire to apply a tailored QFD is to ensure that it has a firm understanding of the requirements in clear operational terms. QFD is an analytical technique to ensure the customer's voice is strong during a system's development. With roots in the commercial manufacturing sector, the QFD is being used increasingly in the acquisition community and is proving to be extremely effective.

The CM Project Office was chartered in 2001 to develop and field anti-armor missiles suitable for use on both ground and air platforms. CM is the primary new weapon system for the Comanche and is a candidate lethality system for the Future Combat Systems. CM has the ability to mitigate the risk created by the aging stockpile of Army, Navy, and Marine Corps Tube-launched, Optically-tracked, Wire-guided (TOW) and HELLFIRE missile systems while enabling the Army transformation to the Objective Force. With the signing of a Memorandum of Understanding in December 2001, CM became an international cooperative program with the United Kingdom and has attracted interest from sister Services as a joint program. This large and diverse user base demands that the materiel developer clearly understand not only the system's requirements but, perhaps more importantly, the operational intent behind each specific requirement.

As is the case with most analytical tools, the process often provides more value than the product; this is certainly the case within the CM Program. Through a series of materiel developer and user meetings, the CM Project Office was able to quickly grasp the intent behind the requirements while also gaining an understanding of each user's unique operational environment and likely target set. The resulting product of this tailored QFD application includes a prioritized list of relevant MOEs and MOPs, MOE and MOP definitions, and a correlation matrix that ties each requirement to the MOE or MOP that it addresses. This information is being linked to the CM Simulation Support Plan, the Test and Evaluation Master Plan (TEMP), and the CM performance specification to assist in establishing traceability among the documentation that will be used to develop, test, and field the CM.

Background

QFD is a systematic process for ensuring that a developer establishes and maintains a user focus. Cross-functional teams use QFD to identify and resolve issues involved in providing products, processes, services, and strategies that will more than satisfy customers. A prerequisite to QFD is research to determine each user's needs, rationale, and intended applications.



This is the process of understanding what the customer wants and how important these benefits are.

The use of QFD can help identify design objectives that reflect user needs. Identifying design objectives from a user's point of view ensures that each user's interests and values are created in the phases of the product innovation process. It can also promote an evolutionary approach to product innovation by carefully evaluating product performance from operational and user perspectives.

Objectives

The primary objectives of QFD are to keep a customer focus, reduce the product development cycle, establish product development specifications—requirements capture, and increase customer satisfaction.

Traditional commercial applications of QFD provide a means of analysis that allows the manufacturer to better understand the user's needs. Applying QFD techniques allows manufacturers to bring innovative products to market more efficiently—in terms of cost, schedule, and risk. QFD attempts to cut down the number of discrepancies in understanding between developer and the end user by linking each "what" to a series of increasingly detailed matrices, commonly referred to as "how." This is accomplished by populating a table often referred to as the "house of quality" (see figure). This house of quality links the whats to the hows by having customers complete a "relationship matrix" to identify which design solutions (hows) are intended to satisfy each customer need (whats). Completing the relationship matrix includes evaluating how strongly each of the design solutions are related to each customer need.

Additional information provided by the house of quality includes a means to link specific engineering parameters to customer needs as well as a means to benchmark competitor or conceptual solutions to customer needs.

CM-Tailored Application

The CM Project Office and its users tailored the traditional QFD process to better suit their needs. This tailoring primarily involved redefining the whats and the hows. The whats became the list of MOEs and MOPs. In operational terms, what do users want and how strongly do they want it? Examples of the whats include increasing "red losses," decreasing "blue losses," increasing missile range, and reducing launch signatures. The hows became each requirement provided in the Operational Requirements Document (ORD). Examples of the hows include range, lethality, platform integration, and environmental requirements.

After developing the list of applicable MOEs and MOPs, each CM user identified which requirements were developed to address each MOE and MOP. This was done in a matrix form for ease of use. In addition to linking MOEs and MOPs to requirements, each user was asked how strongly (strong, medium, and weak) each requirement is related to its MOEs and MOPs.

Applications And Benefits

The products resulting from the CM QFD effort are considered to be "living" and will be modified as user needs evolve and operational priorities change. The process followed to develop the requirements-MOE/MOP relationship provided both the project office and its users with a detailed understanding of the relationship between battlefield effectiveness (MOE/MOP) and system requirements (ORD). This understanding enhances the CM Project Office's ability to translate operational requirements into the system performance specification. As this information matures and couples with a rigorous systems engineering environment, it will allow CM stakeholders to more rapidly accommodate change and better answer user needs. In addition to an opportunity for the CM Project Office to engage its users in a series of meaningful discussions, the benefits include MOE and MOP definitions for use in the TEMP, the Simulation Support Plan, and the system's Analysis of Alternatives.

Conclusion

The technical and operational challenges associated with developing a missile system intended for use on legacy and future ground platforms, rotary-wing platforms, and fixed-wing platforms are significant. The CM Project Office and its users recognize these challenges and realize that engaging in a modified form of QFD provides the detailed information, within an operational context, necessary to ensure that the materiel developer has an in-depth understanding of each requirement. Modifying the traditional house of quality to better suit the needs of DOD's acquisition community provides for a more meaningful product while allowing the information to flow into numerous plans, analyses, and documents necessary to develop, test, field, and support the CM. To date, the most valuable result is the series of materiel developer-user meetings necessary to complete the QFD process. Early in the system's development cycle, these meetings have provided CM stakeholders an opportunity to engage in detailed and meaningful discussions regarding requirements and, perhaps more importantly, how the missile will be used to improve the force's battlefield effectiveness.

JIM SPRINGER is the Platform Integration Lead in the System Integration Division of the Common Missile Project Office. He has a B.S. in engineering from the University of Tennessee and an M.S. in management from the Florida Institute of Technology. Springer is a member of the Army Acquisition Corps and is Level III certified in program management and systems planning, research, development and engineering.

BROOKE FAMBROUGH is a Systems Engineer with Quality Research in Huntsville, AL, working in support of the Common Missile Project Office. She has a bachelor's degree in physics from Grinnell College.

A Revolution In Learning . . .

THE UNIVERSITY OF INFORMATION TECHNOLOGY

Patrick Swan

Introduction

A college student who spends 20 years attending a university but never graduates is called a slacker, or worse. A student-soldier who does the same thing at the Army Signal Center's University of Information Technology (UIT) is called a success. Here's why.

UIT was founded on the premise of "lifelong learning." According to COL Pete Farrell, Deputy Commander, Army Signal Center, "If you don't use your skills, you will lose them. Right now we have very lengthy resident courses that try to cover all critical tasks. But these tasks are perishable if not employed in the first-duty assignment. Likewise, because of rapid advances in technology, skills taught at school can quickly become obsolete. Knowing this, we can't continue to do business as usual."

UIT offers what Farrell calls a "revolutionary approach to training," which involves cutting down on lengthy resident training and providing soldiers needed skills at the "teachable moment." A key feature of the UIT training-and-education model is its focus on specific equipment and technology that Signal soldiers and officers will use at their first duty stations.

"When a soldier arrives here for advanced individual training, we identify early on where his or her assignment will be," Farrell says. "That allows soldiers to get to the field quicker, cheaper, and more focused on what they need to know. Soldiers in the university's first advanced individual training classes graduated in early 2002.

After students complete Advanced Infantry Training (AIT), the school offers a database of simulations and other technology-assisted tools that allow Signal soldiers to learn new equipment and technologies from anywhere in the world using standard computers. Unlike the current Army resident training process, which has a gap of several years between AIT and the Basic Noncommissioned Officer Course (BNCOC), UIT offers technical Signal training as needed throughout a soldier's career.

Training Model

"UIT is the Army training model of the future," says Miriam Browning, Director for Enterprise Integration for the Army Chief Information Officer (G-6). "UIT's cutting-edge IT training model gets Signal soldiers in units faster and trains them for just-in-time mission tasks. From a business perspective, UIT saves the Army time and money as well because it reduces training-cycle times, requires fewer instructors, and reduces equipment costs. UIT's life-long learning model integrates traditional classroom training with simulations and computer-based training. This provides our soldiers with anytime, anywhere access to the skills and knowledge they need to do their jobs. UIT is a remarkable breakthrough in soldier training, in line with Army transformation goals for agile, technology-empowered soldiers."

The UIT Lifelong Training Model serves as the prototype model of change for the entire U.S. Army Training and Doctrine Command (TRADOC), Farrell adds. "Efforts are underway by TRADOC to adapt this model to all their schools."

Simulations Training

Tasks performed by Signal and IT soldiers and leaders are especially well-suited for PC-based simulations training, says MAJ Heather Meeds, Chief of the Systems Integration Division, Directorate of Training at the Signal Center. Most skills required to perform these tasks can best be acquired via the "learning by doing"

technique. Farrell adds that personal computer-based simulations are central to moving training from a completely resident-based program to a lifelong program. The simulations decrease students' reliance on actual signal equipment.

Simulations could cover almost any technical area including basic equipment operations and familiarization, troubleshooting, leader training, and tactical scenarios. UIT planners are also exploring a short physical return to Fort Gordon between AIT and the BNCOC to keep soldiers updated on new skills and changes in technology, but no approval has yet been given.

"As soldiers' careers progress, inevitably they'll be assigned to operate equipment for which they haven't received AIT training. The common architecture and pieces of equipment being simulated are aligned for simple navigation through the training simulation exercise. Each level in the simulation becomes more specific to the training a soldier requires and makes it easier to keep pace with changes in equipment and technology," Meeds says.

Extended Classrooms

According to Farrell, "Virtual campuses and extended classrooms allow students to 'learn by doing' from any possible location. They are not tied to a classroom at any set location."

Presently, unit-run training centers already exist at select locations, such as Fort Lewis, WA; Fort Hood, TX; Fort Huachuca, AZ; and wherever there are high densities of Signal soldiers.

"UIT will use remote or extended classrooms to bring training to Signal soldiers worldwide," says CW5 Wayne Jensen, who supports the university task force with hardware and networking expertise.

"Extended campuses provide a simple and inexpensive solution to technical problems, such as time differences and slow World Wide Web access," Jensen says. "The term 'extended campus' doesn't denote an area where you'll find physical classrooms; 'extended campus' denotes the technological part of the concept. Extended classrooms are as simple as a PC connected in the soldier's home or as complex as a formal classroom with 20 PCs connected to the Internet. The classrooms provide individual soldiers the ability to access a training environment rich in content. Formal, extended classrooms provide an environment for facilitators to administer proctored tests, provide assignment-oriented training, and train small groups of soldiers. Finally, extended classrooms allow soldiers to obtain just-in-time training tailored to their individual requirements without having to attend classes at formal training facilities."

Although high-tech classrooms may not be available at all training locations, UIT isn't delaying implementation of technology-assisted learning programs. "The university's goal is to develop content for education and training," Meed says, "and to make this content accessible and available to the student on-demand. This goal includes access in an individual's home, if necessary." Such virtual classrooms incorporate a set of modern training tools such as study guides, notice boards, student forums, online mentoring, and an interactive multimedia courseware library, all of which are aimed at meeting the individual soldier's needs.

Virtual Classroom Benefits

According to Jensen, "The virtual classroom provides many benefits of the traditional classroom while enjoying the major advantages of training delivered over the Internet that can be accessed at any time from any place. Soldiers are able to choose the most convenient time and place and to structure the training program to suit their precise individual requirements."

UIT is committed to providing an e-learning environment that delivers just-in-time training with just enough practical exercises and simulations to commanders and soldiers at any location worldwide. One example is for soldiers deploying from their home stations for military contingencies.

"Let's say a unit is deploying to a remote part of the world," says SFC Phillip G. Arnold, Chief, Team Signal-Gordon Interim Brigade Combat Team/Army Transformation, Fort Gordon, GA. "They will probably ship their signal equipment and user manuals separately. This means they may spend 45-60 days without equipment on which to train. Their skills will atrophy," he added.

"However, because of UIT three-dimensional simulations, soldiers can continue to train on their equipment virtually," Arnold says. "Once they get their equipment back, they'll be just as competent on it as when they shipped it out—no matter how long ago that may have been."

"Information technology is changing our lives and changing our Army. It makes sense that our education and training strategies must also change. How we train our soldiers and leaders for this ever-changing information technology must truly be a lifelong approach," Farrell says.

PATRICK SWAN is a Public Affairs Officer with the Chief Information Office/G-6. Portions of this article were adapted from the Army Communicator and from a news release by the Fort Gordon Public Affairs Office. He can be reached at ***Patrick.Swan@us.army.mil****.*

FROM THE DIRECTOR ACQUISITION SUPPORT CENTER

I am pleased to announce that the Army's newest field operating agency, the Acquisition Support Center (ASC), has been realigned and is now located at Fort Belvoir, VA. Our internal reorganization and physical move have been challenging tasks, yet our goal remains the same—to serve you, the acquisition workforce. Be sure to access the Army Acquisition Corps (AAC) home page at **http//asc.rdaisa.army.mil** for current contact information.

By the time you read this article, we will have celebrated the traditional annual AAC Ball. It was held Oct. 20, 2002, at the Holiday Inn in Old Town Alexandria, VA. This event again coincided with the annual meeting of the Association of the United States Army (AUSA). I hope that you had the opportunity to attend AUSA and to stop by the AAC booth to see the AAC exhibit "We've Got You Covered."

I would like to take this opportunity to congratulate the Competitive Development Group (CDG) year group (YG) 2000 graduates and to welcome YG03 inductees to the CDG Program. The YG03 CDG Orientation was held Sept. 17-18, 2002, in the National Capital Region in Springfield, VA. Be sure to read the article on the YG03 CDG Orientation on Page 39 of this issue of *Army AL&T* magazine.

From the Army's leadership to the individual workforce member, everyone plays a critical role in Acquisition and Technology Workforce (A&TWF) transformation. Everyone plays a role in ensuring that workforce personnel are provided the right education, training, and experience opportunities to support the warfighter. I would like to direct your attention to Page 26 of this issue of *Army AL&T*, which features an article on the Army Acquisition Workforce Campaign Plan. The Acquisition Workforce Campaign Plan provides a strategic vision of how the workforce must transform to support the war on terrorism and enable Army transformation. Finally, I recommend you read the highly informative article on the Army Acquisition PM Workshop that begins on Page 28 of this magazine.

COL Mary Fuller
Director
Acquisition Support Center

Ask The Acquisition Support Center

I am not sure if I am a member of the Acquisition and Technology Workforce (A&TWF). How can I find out?

The Army's Director of Acquisition Career Management (DACM) is responsible for the management and documentation of all Army A&TWF positions. The DACM has established an acquisition position list (APL) process to enable acquisition commands, program executive offices, and other acquisition organizations to identify civilian and military position requirements to include Active, Reserve, National Guard, and Army Medical Department components. Many sources are available to assist commanders in determining whether or not a position should be identified as A&TWF. These sources include the following, which were disseminated in conjunction with passage of the Defense Acquisition Workforce Improvement Act (DAWIA) of 1990:

• The DOD acquisition career field templates found in DoD Regulation 5000.52-M, Acquisition Career Development Program (available online at ***http://www.dtic.mil/whs/directives/corres/html/500052m.htm****); and*

• The Army implementing guidance associated with the revised "Packard" definition of A&TWF (July 2001).

Organizations submit their civilian acquisition position requirements to the DACM using the APL process. Each acquisition commander has a designated APL command point of contact (POC) who has the authority to submit requests to add, update, or delete positions from the approved APL list. The DACM approves all requests that pertain to civilian critical acquisition positions as well as all military positions. When a new position is approved and added to the APL list, a unique APL number is assigned to the position, primarily as a means to track the position. APL data are also used to report acquisition position information to higher headquarters and Congress as requested.

If your organization has identified your position as A&TWF, the various blocks included on Section I of your Acquisition Career Record Brief (ACRB) would be filled with your current acquisition position data. In particular, the "APL Number" and "Category" fields of Section I would be filled. After reviewing Section I of your ACRB, you may have questions or concerns regarding the current acquisition position data as reflected on your ACRB or regarding the appropriateness of identifying your position as A&TWF. You should begin by discussing this with your supervisor. Your supervisor should know which positions have been deemed A&TWF by your organiza-

tion and should be able to assist you in determining if your position has been properly identified and coded. Once you have determined that it would be appropriate to identify your position as A&TWF, you will need to contact the appropriate APL POC for your command or organization if the data in Section I of your ACRB need to be updated. The APL POC would be responsible for using the APL process to correct any errors in your acquisition position data as reflected on your ACRB or to add your position to the A&TWF. You may also consult with your Acquisition Career Manager (ACM) for information regarding the identification of your position as A&TWF. Your ACM is also available to provide you with a myriad of career management information and advice.

*For additional information, visit the Acquisition Support Center Web site (**http://asc.rdaisa.army. mil**).*

FY02 Major Promotion Board Results

The FY02 Major Promotion Board results were released on Sept. 4, 2002. This article analyzes the board results.

Acquisition Corps Results

Board members reviewed the files of 135 Army Acquisition Corps (AAC) officers in the primary zone of consideration for promotion. From this population, the board selected 116 officers. The resulting primary zone selection rate of 85.9 percent is a difference of five fewer officers based on the Army average; however, this is a 4.0 percent increase over last year's rate. There were 35 AAC officers considered for above-the-zone promotion, and the board selected 13, which is a difference of 3 additional officers. The AAC above-the-zone selection rate was 37.1 percent, which is 8.6 percent higher than the Army average of 28.5 percent. In addition, 3 out of 86 officers considered were selected below the zone, which is a difference of 3 fewer officers than the Army average. The below-the-zone selection rate for the AAC was 3.5 percent, and the Army average was 6.7 percent.

Trend For Selectees

Selection to major is primarily a reflection of how an officer performs in his or her basic branch assignments. Most AAC officers have few, if any, Officer Evaluation Reports (OERs) from acquisition assignments when the Major Promotion Board considers them. Many officers are still completing basic branch, Reserve Officer Training Corps recruiting, and Active or Reserve component assignments, or are attending advanced civil schooling. Therefore, AAC officers are judged against the same criteria as basic branch officers.

Second lieutenant OERs have been purged from officer files and were not reviewed by the promotion board. The most important discriminator continues to be company command OERs, and board members appear to use command reports as the measure of an officer's ability to succeed as a major.

The majority of AAC officers received the new DA Form 67-9 OER for their command time. The new OER eliminates the confusion for the board by clearly communicating the senior rater assessment on above-center-of-mass (ACOM) officers. However, some officers received "one block" command DA Form 67-8 OERs, and the senior rater narrative was extremely important in determining the strength of an OER. Senior rater narratives that quantified an officer's performance sent a clearer picture to the board on the "true block check" (i.e., best officer in a command, top 5 percent, 3 out of 10). Officers with overall COM files and "top block" COM command OERs were at a disadvantage for promotion. Senior rater narratives that focused on the officer's potential seemed generally more effective than OERs focusing on how the officer performed in the job.

Performance in basic branch assignments, especially company command, appeared to be the board's focus. The message is clear: seek company command, do well, and maintain a high level of performance in all other assignments.

The names of the AAC officers selected for promotion to major are shown below. An asterisk indicates a below-the-zone selection.

MAJOR PROMOTION LIST

Aleandre, Rodrigue
Anderson, Lisa L.
Baker, Houston E.
Baker, Sherwood P.
Barker, Wayne E.
Baynes, Leland R.
*Beard, Kirby D.
Bentzel, Thomas F.
Bledsoe, Elizabeth
Blomquist, Michael
Brennan, William T.
Brown, Christopher
Brown, Evan J.
Byers, David B.
*Calhoun, John C.
Chan, Joseph H.
Clomera, Arthur B.
Coile, Gregory H.
Collins, Robert M.
Conaway, Stephen J.
Coombs, John L.
Cude, Clarence C.
Davidson, Paul G.
Davis, Gloria D.

Debany, Richard B.
DeSilva, Roy A.
Devine, Michael J. III
Ellis, Bruce E.
Ellison, Kevin L.
Evans, Jeffrey G.
Evans, Mark M.
Feuerborn, Thomas A.
Finch, Kevin J.
Foster, Michael E.
Fowler, Jonathan L.
Francis, Sabrina E.
Furber, Daniel L.
Gaddy, Roland M.
Gambles, Kenneth L.
Gardunia, Craig R.
Geisbert, Kevin L.
Gill, Americus M.
Greany, Peter N.
Green, Lance B.
Greig, Amanda P.
Greig, Scot W.
Grosenheider, Susan
Grzybowski, Gregory
Hackett, Christine
Hagenston, Marty G.
Hang, Yee C.
Harp, Daryl M.
Harris, Terrece B.
Hatchett, Barry M.
Hawkins, Jon
Heck, Joseph D. Jr.
Henrie, Mark E.
Henthorn, Thomas J. Jr.
Hoffman, Dean M. IV
Hollis, Fredrick C.
Hostetler, Jane M.
Hribar, Robert S.
Hurst, Donald W.
Jackson, William D.
Johnson, Jeffrey H.
Johnson, Mark A.
Jones, Ernest C.
Kerley, Nelson G.
Killen, Bradley J.
Kimball, Charles F.
Kimbley, William F.
King, Federica L.
Landry, Paul D.
Laughlin, Kelly D.
Lauro, Paul M.
Law, Robert N.
Lee, William E.
Ludwig, Eric W.
Lyttle, Brian J.
MacGregor, Lee J.
Mallory, David S.
McGee, Randy E.
McGurk, Michael K.
Miceli, Robert J.
Micklewright, Scott
Middleton, Robert E.
Morgan, David L.
Muhammad, Hakeem A.
Myers, Vernon L.
Ogburn, John D.
Oquendo, Gregory
Overbey, Gerard J.
Padilla, George
Paige, Matthew N.
Pearman, William F.
Pearson, William E. Jr.
Powell, Shawn B.
Rannow, Eric C.
Ransom, Audrey
Ravenell, Craig M.
Roberson, Aaron D.
Roberson, Rochelle
Ryba, Bruce A.
Ryder, Ronald L.
Satterfield, A.
Shea, Thomas E.
Sherrill, Tommie L.
Shuler, Paul D.
Sieber, Anthony
Skinner, James T.
Smallwood, Phillip
Smith, Jesse W.
Sparrow, William E.
Stewart, Joyce B.
Stone, Daniel L.
Tasca, Adam R.
Thomas, Robert J.
*Thompson-Blackwell, Rosalyn
Thorne, James M.
Thorpe, Scott N.
Traxler, Michael E.
Vanderschaaf, Reid
VanRiper, Steven G.
Volkin, Ronald S.
Warner, Timothy A.
Warren, Thomas E.
Wilhide, Donald B.
Woodman, Richard F.
Worshim, Charles II

SSC Selection Board Results

Results of the Senior Service College (SSC) Selection Board were released Aug. 7, 2002. The board selected 29 members of the Army Acquisition Corps (AAC) to attend SSC during academic year (AY) 03-04. The AAC had 351 officers eligible for selection, and 29 (8.1 percent) were selected. The overall Army selection rate was 7.8 percent.

Twenty-six of the 29 selectees were former or current product managers (PMs) or acquisition commanders (ACs) (including those on orders to a Command Select List position). One of the officers selected was revalidated from the AY 02-03 list; he is not included in the selection statistics.

This SSC Selection Board was the first one held by career field. AAC officers (Functional Area (FA) 51) and Foreign Area Officers (FA 48) are the only two FAs in the operational support career field. As you will note in the selectee profile, the results from this board were different in some areas than we expected based on historical trends. This year's results do not indicate specific trends because it is the first year the board was held by career field; however, we may see new and different trends develop in the future. Below is an overview of selectee profiles:

• Eighty percent or more of all new Officer Evaluation Reports (OERs) were above-center-of-mass (ACOM).

• Eleven selectees had no PM/AC OERs in their board file.

• Eighteen selectees had at least one PM/AC OER in their board file (last year all selectees had at least one PM/AC OER in their board file).

• Selectees belonged to three primary year groups (YGs): YG82—9 (28.6 percent), YG83—9 (28.6 percent), and YG84—9 (32.1 percent). Last year, officers were primarily selected from YGs 82 and 83.

Each officer selected for attendance at SSC received a letter from the U.S. Total Army Personnel Command's (PERSCOM's) Acquisition Management Branch (AMB) detailing how to access the PERSCOM Officer Career Management Knowledge Center through the Army Knowledge Online Web site. The letter also contained a synopsis of each SSC and available fellowship. Officers will provide their SSC preferences online through the Knowledge Center. Selectees may choose to attend resident SSC, enroll in the Army War College Distance Education Program for AY 03-04, or decline. SSC selectees normally attend the Army War College, the Air War College, the Industrial College of the Armed Forces (ICAF), or the Acquisition Fellowship at the University of Texas-Austin (UT-Austin). The latter three choices have limited seats. ICAF and UT-Austin tend to be the two programs for which there are more officers wanting to attend than seats available.

In addition, ICAF has special considerations: officers who are joint Service officers and have been awarded an additional skill identifier of 3L are ineligible to attend, and 50 percent plus one of the attendees (by branch) must be assigned to a joint position immediately following school. Therefore, it is very important that selectees give as much consideration to their second and following choices as they do to their first choice.

The SSC alternate list is not formally published; however, officers selected as alternates usually receive a letter in the December timeframe informing them of their status. AMB will only receive the list of officers who are considered high alternates (those officers who are most likely to be activated to attend SSC). The numbers activated are dependent on approved operational deferments and declinations. AMB does not expect to receive this list until mid-December 2002 or January 2003.

The names of selectees are listed below. An asterisk indicates the revalidated officer. All selectees are lieutenant colonels.

Bryant, Thomas Henry
Burke, Kyle Thomas
Callahan, Michael Owen
Cook, David Alan
Dever, Douglas Allen
Doyle, Norbert
Eberle, Nathan Roy
Ellis, Carl Mason
Hazelwood, Donald Alexander
Hollingsworth, Larry Dale
Hoppe, William Charles
Hughes, Daniel Peter
Knudson, Albert
Lamb, William Leetch
Leisenring, Stephen Bryan
Lepine, Paul Raymond
Manning, Barry George
Paquette, Derek Joseph
Parker, William Ernest
Ralph III, James Robert
Rice, David John
*Sears, George Albert
Shiffrin, Scott Erwin
Shipe, Richard Thomas
Shufflebarger, Newman Deon
Walters, Stephen
Wassmuth, Richard Joseph
Wheeler, Kenneth Alan
Williamson, Michael Eric
Wolfe, Daniel G.

Army Acquisition Qualification Course Replacing MAM Course

A new course is being created for the Army acquisition workforce. The 8-week Army Acquisition Qualification Course (AAQC) will replace the venerable Materiel Acquisition Management (MAM) Course. Its curriculum will cover requirements determination, program management, acquisition logistics, contracting, materiel testing, software acquisition, and a number of other related functional areas.

Since 1985, the Army has relied on the MAM Course as its primary training course for officers being accessed into the Army Acquisition Corps (AAC). During the 17 years it was offered, the MAM Course provided fundamental acquisition training for thousands of graduates including Army officers, Department of the Army civilians, and allied officers. The 7-week MAM Course provides equivalencies to ACQ 101 and ACQ 201—two Defense Acquisition University (DAU) courses required for several acquisition career fields.

In July 2001, then Director for Acquisition Career Management (DACM) and MAM Course Proponent LTG Paul J. Kern approved a new curriculum for the Army acquisition workforce. In March 2002, LTG John S. Caldwell Jr., the current DACM and MAM Course Proponent, continued the transformation of the MAM Course for the AAC by underscoring the need to have the AAQC be taught at other installations. Both Kern and Caldwell determined that acquisition training for future officers and civilians entering the acquisition workforce should be expanded. This will allow the AAQC to be taught worldwide. The expanded training will better equip officers and civilians to successfully manage the highly complex task of systems acquisition.

Working with the course proponent, officials at the Army Logistics Management College (ALMC) developed a new and challenging curriculum. A cadre of Army officers and civilians will be responsible for creating course materials for this 8-week course. A companion decision to limit the amount of time for this entry-level training course is adding an additional challenge to a complicated task.

Simultaneously, ALMC is establishing a satellite campus at Huntsville, AL. While AAQC will be the centerpiece of the ALMC satellite campus, other ALMC courses will be offered at Huntsville as well.

AAQC will provide equivalencies for a wide range of DAU-sponsored courses. These include:

- Fundamentals of Systems Acquisition Management (ACQ 101),
- Intermediate Systems Acquisition (ACQ 201),
- Basics of Contracting (CON 101),
- Principles of Contract Pricing (CON 104),
- Basic Information Systems Acquisition (IRM 101),
- Acquisition Logistics Fundamentals (LOG 101), and
- Introduction to Acquisition Workforce Test and Evaluation (TST 101).

The first offering of AAQC is scheduled to begin in January 2003. Additional information about AAQC may be found at the following Web site: **http://www.almc.army.mil/AMD/Huntsville/aaqc_homepage.htm**.

The preceding article was written by Joe R. East Jr., who has been designated to head the ALMC-Huntsville, AL, campus and serve as the AAQC Course Director. He is

a graduate of the DSMC Program Management Course and has a B.S. in general business from Mississippi State University and an M.S. in management from the Florida Institute of Technology.

FY03 Army Experimental Test Pilot Board

A U.S. Total Army Personnel Command (PERSCOM) board will convene Feb. 18, 2003, to select those aviators best qualified to participate in the Army Aviation Experimental Test Pilot Training Program. This board will review files and select both commissioned and warrant officers. Commissioned officers selected to attend the U.S. Naval Test Pilot School (USNTPS) are automatically accessed into the Army Acquisition Corps, where they will serve for the remainder of their careers. Warrant officers will continue to be managed by the Warrant Officer Division of PERSCOM.

Applications must include the following:

• Official transcript of college credits,
• A copy of the aviator's most current *Individual Flight Record and Flight Certificate-Army* (DA Form 759),
• Endorsement(s) by an instructor pilot/standardization instructor pilot who will comment on the applicant's flying ability,
• A statement of the applicant's swimming ability, and
• Endorsement from the first field grade officer in the applicant's chain of command.

To be eligible, commissioned officers must meet the following criteria:

• Have at a minimum a bachelor's degree in an engineering discipline or hard science,
• Be in the grade of captain or major,
• Have at least 7 years of active federal service,
• Be basic branch qualified at the company grade level prior to attendance at USNTPS, and
• Have a minimum of 700 hours total flight time (simulator time not included) with at least 500 hours in rotary-wing aircraft.

To be eligible, warrant officers must meet the following criteria:

• Have at a minimum an associate degree with above average grades;
• Have completed college algebra, calculus, and physics (or mechanics) with above average grades;
• Be in the grade of CW2 or higher;
• Have completed military education level for current grade prior to attending the test pilot training program;
• Have at a minimum 1,000 total flight hours (simulator time not included) with at least 700 hours in rotary-wing aircraft; and
• Have sufficient time remaining upon completion of training to complete the Active duty service obligation (ADSO).

For all applicants, highly desirable qualifications are:

• Successful completion of college mechanics (solids, fluid, flight), thermodynamics, aerodynamics, control theory, differential equations, and advanced mathematics, with above average grades;
• Qualification and experience in complex aircraft such as the CH-47, UH-60, AH-64, OH-58D, and/or fixed-wing military aircraft; and
• Rating as an instructor pilot, instrument flight examiner, or maintenance test pilot.

Note that pilot-in-command flight hours are weighted more than co-pilot or pilot flight hours in the selection process.

An individual who is qualified to recommend and endorse an applicant should make a thorough appraisal of that applicant's flying ability, operational experience, motivation, adaptability, and ability to communicate orally and in writing.

All experimental test pilot board applications must be received at PERSCOM no later than Jan. 11, 2003. Commissioned and warrant officer applications should be mailed to Commander, U.S. Total Army Personnel Command, ATTN: TAPC-OPB-E (MAJ Harvey), 200 Stovall Street, Alexandria, VA 22332-0411.

Experimental test pilot utilization assignments will be based on the needs of the Army. Initial tours will be served at the Aviation Technical Test Center, Fort Rucker, AL, or the Aviation Applied Technology Directorate, Fort Eustis, VA. USNTPS graduates will serve as experimental test pilots or in organizational staff positions that directly affect the type, design, and configuration of Army aircraft.

For additional information, please contact MAJ Keith Harvey at (703) 325-3128, DSN 221, or e-mail **keith.harvey@hoffman.army.mil**; or CW3 Kimberly Young at (703) 325-5251, DSN 221, or e-mail **Kimberly.Young@hoffman.army.mil**.

CAREER DEVELOPMENT UPDATE

Board Selects Competitive Development Group

A board convened in August 2002 to select individuals for the Army Acquisition Corps Competitive Development Group (CDG) Year Group (YG) 2003. Fifteen individuals were selected to participate in this 3-year career development program. This is the sixth CDG YG to be chosen—a total of 120 members to date. Each applicant went though a stringent board selection process for the opportunity to be provided expanded leadership and management training and cross-functional experience in various acquisition career fields.

Congratulations to all those selected to this program! Names of selectees and their employing agencies follow.

Garrison, Freida S.	AMCOM
Gomez, Oscar Jose	AMCOM
Herman, Jeffery P.	AMCOM
Hodges, Ancel B.	Army National Guard Bureau
Huhlein, Bradley J.	AMCOM
Ivey, Regina L.	AMCOM
Janisz, Craig S.	STRICOM
Lyle, Morris	AMCOM
Mitchell, George J.	CALL
Nulk, Margaret Z.	PEO, Soldier
Riddick, Robert L.	Objective Force Task Force
Setili, Colleen M.	TACOM
Shields, Joseph R.	DSCS
Szcepanski, Richard M	AMCOM
Willoughby, Michael B	U.S. Army Europe Safety and Occupational Health Office

ACQUISITION EXCELLENCE

STAMIS Keeps Pace With Objective Army

The Army leadership recognizes that transforming today's Army into a more agile, lethal, versatile, and sustainable future force requires time, perhaps 10 to 15 years. During this transition phase, the Legacy Force systems and corresponding legacy Standard Army Management Information System (STAMIS) will require modernizing and upgrading to keep pace with information technology advancements. STAMIS will continue processing critical combat service support (CSS) information well into 2007 and possibly beyond. Many of these aging systems were developed with hardware and software platforms of the 1980s, such as MS-DOS and 8MHz Intel 80286 processors. These legacy STAMIS applications have become unsupportable under their old hardware and software platforms and require a fresh look to extend their life until replaced by newer CSS systems.

The Integration Division within the Operations and Mission Support Directorate of the Program Executive Office, Enterprise Information Systems is providing solutions to extend critical STAMIS life cycles at minimal acquisition cost while also providing enhanced capabilities. Personnel in the Integration Division, in conjunction with software developers at Fort Lee, VA, are transforming the legacy STAMIS to operate with modern hardware and software. The successful fielding of the first upgrade in January 2002 proved that the life of the legacy systems could be extended until the advent of the Global Combat Support System-Army.

This successful January fielding was an upgrade to the Unit Level Logistics System-Ground (ULLS-G), a stand-alone MS-DOS based application that automates unit supply, maintenance, and materiel readiness management operations. ULLS-G software was repackaged to run under the Windows 2000 Professional operating system and given a file transfer protocol capability for data transfer over dial-up or local area network Internet/intranet connections. The application can now run in an MS-DOS virtual machine under Windows 2000. The actual ULLS source code (written in Ada) was unchanged, saving an estimated $2 million to rewrite the system. In addition, the upgrade was completed in 3 months rather than an estimated 9 to 12 months needed to rewrite the system. The benefit of extending the life of ULLS-G is that modern supportable hardware and software can now be used to enhance the CSS capability of the soldier.

The second legacy STAMIS considered for upgrade, the Unit Level Logistics System-Aviation, has recently completed testing with Windows 2000 and is in distribution. The upgrade promises benefits similar to those realized with the ULLS-G upgrade. Savings are estimated at $2 million to rewrite the system; completion is estimated at 6 months rather than 12 to 18 months needed to rewrite the system.

Future candidate logistics systems may include the Unit Level Logistics System-S4 and the Standard Property Book System-Redesign. Personnel in the Integration Division are also working with Fort Lee developers to migrate other types of the legacy STAMIS to Windows 2000 in the near future.

For additional information, contact Monti Jaggers at (703) 681-7571 or ***monteze.jaggers@saalt.army.mil****.*

JTRS Program Office Receives Award

Principal Assistant Deputy Under Secretary of Defense for Logistics Materiel Readiness Allen Beckett recently presented the Defense Standardization Program Achievement Award to the Army-led Joint Tactical Radio System (JTRS) Program Office. The award recognizes standardization efforts that demonstrably promote interoperability, reduced total ownership costs, or improved readiness. The JTRS team developed standard software communications architecture for use in all future DOD tactical radio designs. For the first time ever, the military Services will use common waveforms and software-defined radios that act and are modified like computers.

Emery Receives Attorney Of The Year Award

Patrick J. Emery, an employee of the Army Research Laboratory (ARL), has received the Army Materiel Command's (AMC's) 2002 Joyce I. Allen Attorney of the Year Award. Emery is considered the Army's expert in the use of cooperative agreements that combine government, industry, and academia resources.

Emery was presented the award by AMC Commander GEN Paul J. Kern during a recent ceremony related to the AMC Continuing Education Legal Program in Florida. In addition to receiving a certificate of achievement and a personal plaque, Emery keeps the AMC rotating plaque for 1 year. The award commemorates the work of Joyce I. Allen, who was an AMC attorney.

This award recognizes the civilian or military attorney or patent advisor selected by the awards committee for outstanding accomplishments or professional achievements in the service of the legal profession and the community.

Emery was cited for his innovative service in helping implement ARL's very successful Federated Laboratory (FedLab) Program as well as for his role as ARL Collaborative Technology Alliances (CTA) Program counsel for the past 2 years. The CTA Program is the follow-on to the FedLab Program that represented an experimental approach in Army research and development. FedLab established a cooperative research environment for scientists and engineers from government, industry, and academia that flourished for 5 years.

The CTA Program expanded the original three FedLab research areas to five, and Emery, with his FedLab experience, was integrated into the CTA Program planning process. Among the improvements he recommended were extending the program from 5 to 8 years duration and simultaneous competition for the award of research cooperative agreements and technology transition contracts for each of the research areas. The purpose of the technology transition contracts are to provide incentives to transition the research results while still performing under the cooperative agreement. Emery has been instrumental in negotiating other joint research agreements in areas ranging from high performance computing to electric gun technologies.

This article was written by Dave Davison, an ARL Public Affairs Officer.

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How is your organization helping to improve the Army's combat capabilities?

MG Steven W. Boutelle
Director of Information Operations, Networks, and Space
Chief Information Officer (CIO)/G-6

The CIO/G-6's role in acquisition has changed significantly during the past year. Prior to the Army program executive office (PEO) and deputy for systems acquisition realignments, the CIO/G-6 (formerly the Director of Information Systems for Command, Control, Communications, and Computers) was responsible for the acquisition management of the programs under PEO, Command, Control and Communications Systems (C3S) and PEO, Standard Army Management Information Systems (STAMIS) (now PEO, Enterprise Information Systems). Since the realignment, the new CIO/G-6 has served as an acquisition advisor to the Army Acquisition Executive, addressing numerous critical areas important to the warfighter.

Consistent with the *Clinger-Cohen Act*, the CIO/G-6 reviews *all* Army PEO programs for conformance with the tenets of that legislation, and "monitors the performance of information technology programs … and advises the head of the systems developing agency regarding whether to continue, modify, or terminate a program or project." CIO/G-6 also facilitates the acquisition of new information technology to achieve the agency's strategic goals. Programs requiring Clinger-Cohen certification are reviewed by the CIO/G-6 prior to fielding, thus ensuring seamless convergence of joint forces.

The CIO/G-6 also reviews every program to confirm that its design and subsequent development follow the Army's and DOD's larger plan to achieve a network-centric force. This includes certification by the Army's Central Technical Support Facility at Fort Hood, TX, to ensure that all Army warfighter systems are interoperable with each other. (Joint certification is accomplished at the Joint Interoperability Test Command at Fort Huachuca, AZ.)

G-6 personnel routinely contact and visit major commands and units worldwide, continually reviewing where resources should be targeted to increase warfighting capability, coordinating those resources, and serving as a budget process advocate. Additionally, the CIO/G6 validates the larger Army Knowledge Enterprise Architecture from the foxhole to the Pentagon. This entails guiding the enterprise so that it seamlessly comes together, tying tactical units to the larger Army enterprise—including the emerging Army Knowledge Management effort and Army Knowledge Online. As joint doctrine and joint programs gain increased emphasis, the G-6 serves as the Army representative to ensure that current and future joint programs are interoperable, thus providing the enablers needed for our forces anywhere, anytime.

BG Michael R. Mazzucchi
Program Executive Officer Command, Control and Communications Tactical (C3T)

My primary objective has been, and will continue to be, to improve the warfighter's ability to clearly see the friendly situation as it unfolds throughout an operation, to overlay that picture with our best information regarding the enemy's activities, and to support the commander with various decision aids. As Sun Tzu states, "*One who knows the enemy and knows himself will not be in danger in a hundred battles.*" It is most important to be able to use this battlefield information to make critical decisions within the decision cycle of the opposing force. The Army Battle Command System (ABCS) developed by the Program Executive Office, C3T has made great strides in providing the warfighter valuable tools to understand the tactical situation more clearly, make decisions with more confidence, and react more quickly to changing battlefield conditions. Our participation in a number of Army warfighting experiments at the National Training Center, Fort Irwin, CA, and elsewhere has allowed the Army to demonstrate the value of these capabilities in defeating the opposing force. On the road toward transformation, the fielding of ABCS to the 4th Infantry Division and the first Stryker Brigade Combat Team (SBCT) is nearing completion, while the fielding to the 1st Cavalry Division and the second SBCT is well underway.

In addition to supporting the Army's traditional warfighting role, we have been able to quickly adapt some of this technology to support operations other than war, e.g., Bosnia and Kosovo. The Balkans Digitization Initiative allowed commanders in the region to have accurate visibility of their friendly elements over a very dispersed geographic area. A similar but improved version of this capability called the Gulf Digitization Initiative is being prepared for fielding to various units participating in Operation Enduring Freedom.

Operation Enduring Freedom will require interoperability among Army units in varying stages of modernization and with our sister Services and coalition partners. Therefore, in addition to the technical products this

organization provides, we are leveraging our engineering knowledge base, which has matured over the last several years. We are also taking a leadership role in directly supporting the warfighter with systems engineering and integration support. It is essential that we ensure optimal interoperability among the dissimilar and heterogeneous digitized equipment currently employed across the Department of Defense.

COL(P) James R. Moran
Program Executive Officer Soldier

In June 2002, the Army activated the Program Executive Office (PEO), Soldier, consolidating 346 soldier programs and giving us a unique opportunity to enhance soldiers' combat capability today and in the future. Today, Team Soldier is supporting our deployed forces by accelerating fielding schedules with commercial off-the-shelf (COTS) equipment. Two COTS items—global positioning systems (GPSs) and Viper binoculars with integrated laser rangefinder and digital compass—enable soldiers to direct joint and Army fires today with absolute precision. In addition, our units are getting on an accelerated basis the XM107 .50-caliber sniper rifle and the new Thermal Weapons Sight for the M4 carbine and M16 rifle. Looking out a few years, the airburst capability of the XM29 will allow soldiers to attack an enemy behind cover.

Integrating GPSs, laser rangefinders, and video sights with the individual communications of a wireless LAN will allow an infantryman to instantly see on a helmet-mounted display the location of every member of his squad and the enemy other squad members see. That means that a soldier on the right flank will be able to instantly and precisely show the squad an enemy waiting in ambush on the left flank.

Additionally, Team Soldier's Air Warrior Program will enhance the aircrew's performance to fully exploit the aircraft's capabilities. Treating the soldier as a system, PEO, Soldier will improve the individual soldier's lethality and situational awareness, and still lighten his combat load. This will give the American soldier an unparalleled advantage in both the long-range and close-in fight. Army Chief of Staff GEN Eric K. Shinseki summed up what Team Soldier is all about when he said, "Soldiers are the centerpiece of our formations."

UNITED STATES POSTAL SERVICE

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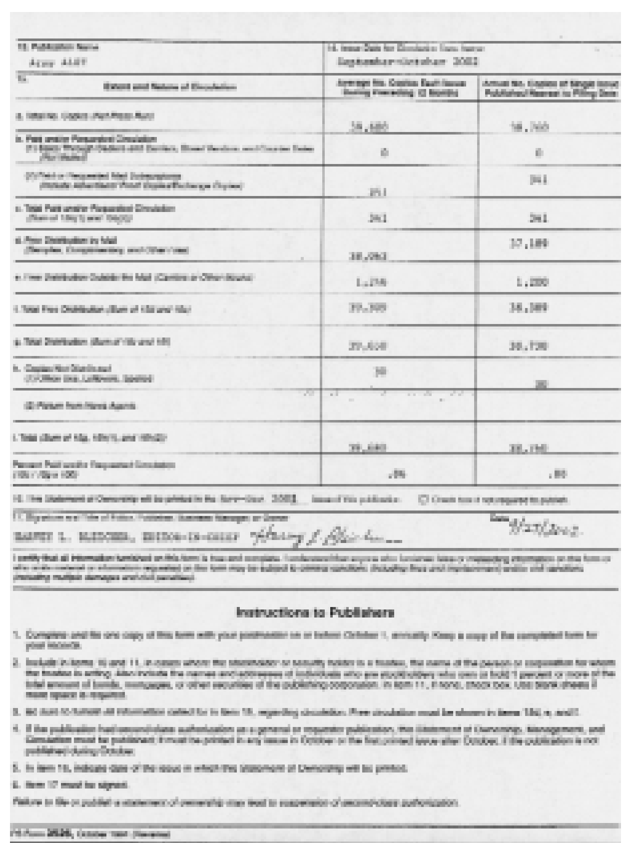

Instructions to Publishers

AAE/MILDEP Visit
Acquisition Support Center

Photos by Richard A. Mattox

On Sept. 24, 2002, Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT)/Army Acquisition Executive (AAE) Claude M. Bolton Jr. and his Military Deputy (MILDEP) LTG John S. Caldwell Jr. visited the Acquisition Support Center (ASC), Fort Belvoir, VA. The purpose was to receive a command brief, visit ASC's new facilities, and meet with ASC employees.

The command brief was presented at an executive working lunch that was held for the AAE, the MILDEP, and ASC Director COL Mary Fuller, ASC Deputy Director Craig Spisak, and division chiefs. Bolton and Caldwell then took a walk-through of Buildings 201 and 314, personally greeting ASC staff members at their individual workstations. Following tours of the buildings, Bolton and Caldwell viewed the new Army Acquisition Corps flag, provided brief remarks, and spoke with the collective ASC staff. Both Bolton and Caldwell praised the ASC workforce for its outstanding contributions to the Army's mission.

Left to right: ASC Director COL Mary Fuller, ASAALT Claude M. Bolton Jr., ASAALT Military Deputy LTG John S. Caldwell Jr., ASC Chief of Staff LTC(P) Gregory J. Fritz, and Army AL&T Editor-in-Chief Harvey Bleicher discuss some of the magazine's resources.

Left to right: Jael Latham and Jerry Lee, employees of Science Applications International Corp. (SAIC) who support the Army's Acquisition Demonstration Project, review project deadlines with ASAALT Claude M. Bolton Jr.

Shown left to right: ASC Deputy Director Craig A. Spisak, ASAALT Military Deputy LTG John S. Caldwell Jr., ASC Director COL Mary Fuller, ASAALT Claude M. Bolton Jr., and ASC Administrative Officer Barbara Wright review administrative procedures.

Yanks: The Epic Story of the American Army in World War I

By John S.D. Eisenhower with Joanne T. Eisenhower
The Free Press, New York, 2001

Reviewed by Geoffrey French, a Counterintelligence Analyst with Veridian and former Logistics Specialist for the U.S. Marine Corps Reserve.

In times of crisis and war, soldiers do not simply materialize on the battlefield. Even today, the transport of trained, supplied, and prepared troops to the battlefield demands a daunting logistical effort. In 1917, this effort might have seemed insurmountable to American planners. The book *Yanks: The Epic Story of the American Army in World War I*, written by John S.D. Eisenhower with Joanne T. Eisenhower, describes not simply the American Expeditionary Force's (AEF's) performance in the field, but the enormous effort it took to get the troops to the front line, and the constant maneuverings to make them an independent and coherent fighting force.

Overcoming the relatively straightforward problems of recruiting, training, and equipping an army essentially from scratch is a difficult task in and of itself. But the United States was entering a war already long underway and joining Allies such as the United Kingdom and France, whose leaders had specific ideas about how U.S. troops would be used. Moreover, as a junior partner fighting on French soil, U.S. leadership was operating to a large degree at their discretion. Although war may be an extension of politics, politics—even in wartime—are not reserved for use against an enemy. GEN John J. Pershing, AEF Commander, experienced this firsthand, facing constant pressure to have U.S. soldiers divided into small units to be used under French or British divisions. He adamantly refused this, insisting on independent training, supply, and command.

Eisenhower provides outstanding insight into the politics behind AEF operations, drawing on many memoirs and primary sources of the politicians and generals involved. These are presented in an easy storytelling style, which may reflect Eisenhower's familiarity with areas where political and military matters meet. Eisenhower was himself a West Point graduate and Army officer in Europe after World War II, and served in political posts in his father's and President Nixon's administrations. He is careful to present the strong feelings of the men involved in shaping World War I without implying judgments about their positions or characters. In fact, he presents the interests of the French and British in a well-balanced manner that allows the reader to understand the larger context of the arguments between the United States and its Allies.

The AEF's battlefield experiences are also a major focus of the book, which is organized around watershed events in the AEF's growth. The first part describes the period from the U.S. entry into the war to the deployment of U.S. troops; the second, the AEF's initial battles to its undertaking of independent objectives; the third, its independent operations to the end of the war.

Eisenhower brings personal knowledge of the geography to bear in describing the layout of the battlefields. This, along with the detailed maps, helped provide fluid narratives of the action. He supplements historical facts of the battles with personal accounts from soldiers. Some stories are better integrated than others, but almost all of them provide some insight into the nature of the fighting and what it must have been like. Although collectively U.S. casualties in the war were far fewer than those of its Allies, the loss of life and destruction in the battles were still unbelievably intense. The battle scenes leave the reader with a number of vivid images.

Some critics of the book argue that it overstates the importance of the U.S. military actions in the war. This is to misunderstand Eisenhower's purpose. *Yanks: The Epic Story of the American Army in World War I* is not a history of World War I, but one specifically of the AEF experience. There is no question that U.S. entry into the war tipped the balance between the entente powers and the central Allies, but the author neither exaggerates nor minimizes the contributions of the AEF. AEF troops are presented as a triumph of vision and organization for the Americans. People who understand the difficulties of organizing military operations will have a great deal of appreciation for the challenges and obstacles that GEN Pershing overcame to allow the AEF to contribute to the war as an independent fighting force.

It's Your Ship: Management Techniques from the Best Damn Ship in the Navy

By CAPT D. Michael Abrashoff,
Warner Books, 2002

Reviewed by LTC Kenneth H. Rose (USA, Ret.), PMP, a Project Management Instructor for ESI International residing in Hampton, VA, and a member of the Army Acquisition Corps.

Not too long ago, conventional wisdom was that if you want to make the boat go faster, whip the oarsmen harder. D. Michael Abrashoff knows a better way and explains how in *It's Your Ship: Management Techniques from the Best Damn Ship in the Navy*.

BOOKS

The book is misnamed. Abrashoff may characterize his subject as "management," but it is immediately apparent that he is talking about leadership. He deals not with disciplined, controlled execution of an exhaustively prescribed plan, but rather with innovative, creative solutions to both traditional and novel problems. The tools for those solutions—the media through which organizations achieve enduring, superior performance—are people.

The book is more than a "brag." Abrashoff, former commander of the guided missile destroyer USS Benfold, provides hard numbers that show reduced costs in operations and maintenance, increased retention rates, and improved tactical performance. He provides anecdotal evidence of improved motivation and morale—those unquantifiable, almost magical elements that enable people to move mountains when the need arises.

The key to all this is in the book's title. Early in command, Abrashoff was approached by a sailor who had a problem. As commander, he could have issued instructions as a solution. Such a traditional response would have been expected. It also would have perpetuated a dependent, cautious command environment that had not served the ship well in the past. Instead, Abrashoff invited/challenged the sailor to suggest a solution. After all—and here's the zinger—*It's your ship*.

This simple yet powerful turnaround became the command philosophy and the motto for the ship. Using it as a foundation, Abrashoff began a leadership journey that he details in a conversational, engaging way throughout the book.

He documents the journey by way of a series of thematic chapters that are subdivided into central leadership points, which are in turn illuminated by examples from experience. This gives the book a comfortable, practical feel that readers will find compelling.

For example, Chapter 6 is titled, "Look For Results, Not Salutes." It includes: help knock down the barriers, let your crew feel free to speak up, free your crew from top-down-itis, nurture the freedom to fail, innovation knows no rank, and challenging your crew beyond its reach. Ten other chapters are organized in a similar manner. In all, they cover the bases of leadership in an environment of importance, opportunity, and risk.

Abrashoff's anecdotes are informative and say as much about organization culture as they do about Benfold leadership. In one example, Abrashoff describes his authorized purchase of a commercial off-the-shelf item of foul-weather clothing that was superior to the more expensive Navy supply item. The crew loved it. When the crew of another ship saw the item, they wanted it too. The commander of the other ship—an officer senior to Abrashoff—responded in a predictable way: he ordered Abrashoff to recall the item from the Benfold crew because it was causing dissatisfaction among his own crew. Abrashoff responded predictably: he refused. The senior commander relented, but could have handled the matter differently had he viewed the positive effect the items had on the Benfold's crew as an opportunity to obtain collective achievement from an individual organization success, or "A rising tide lifts all boats."

Army project mangers can gain much from this book. The Navy experiences—even those involving junior enlisted matters—translate readily as concepts and principles to a project management environment. Abrashoff's first-person account offers wisdom and insight that makes *It's Your Ship* well worth the read. Army project managers—and unit leaders, too—will find application of the Benfold experience a short leap. After all, *it's your project*.

NEWS BRIEFS

Oxygen Generators Reduce Deployment Weight

In support of Operation Enduring Freedom, the Army medical community recently shipped an oxygen generation system to Afghanistan that weighed a little more than a ton (or the equivalent of 13 oxygen cylinders). The off-the-shelf oxygen generator produces 120 liters of oxygen a minute continuously and can refill cylinders. Troops still took eight oxygen cylinders with them to provide several hours of backup capability, but those eight can be refilled, thus eliminating the need for replacement cylinders.

Two additional generators are in development. One, a pressure-swing generator, takes up the space of a 2-foot by 2-foot by 3-foot box and weighs 250 pounds. Its pump uses an 8-horsepower motor, turns at 125,000 revolutions per minute, weighs 10 pounds, and delivers the same amount of oxygen as the recently deployed model.

The second, a promising ceramic oxygen generator, is more portable than the pressure-swing type. The ceramic oxygen generator fits in a 4- by 8- by 6-inch box that weighs 20 pounds. Using electricity, aircraft jet engine metal, and ceramic, this generator produces oxygen from regular air by using electricity to draw oxygen atoms through a ceramic membrane. The atoms are

then collected and delivered directly to a patient. The ceramic oxygen generators work unfazed during chemical and biological attacks. Although the generator's high operating heat disables chemical agents, these agents are unable to pass through the ceramic material like the oxygen ions can.

Testbed Finds Home In Modular Tents

A five-person team at the Army Telemedicine and Advanced Technology Research Center (TATRC) was charged in June 2001 to create a prototype digital, deployable field medical hospital in 1 year. Based on requirements for future Army shelter systems developed by the Army Medical Department Center and School, the fruit of the team's labors now resides neatly inside five Alaska shelter tents next door to the 6th Medical Logistics Management Center building at Fort Detrick, MD. Stocked with the latest in commercial off-the-shelf portable medical technology such as portable anesthesia and digital X-ray machines, the Forward Deployable Digital Medical Treatment Facility is a research platform that TATRC officials hope will shape future Army field medical environments.

Army Launches New Contracting Initiative

In recent years, senior acquisition leaders from the Army and the Office of the Secretary of Defense (OSD) have become very concerned that some of their incentive programs are not yielding the anticipated benefits (i.e., enhanced performance and lower costs). In fact, there is concern that contractors are being encouraged to achieve the opposite of what the Army and DOD intends and needs. Consequently, in February 1999, Dr. Jacques S. Gansler, then Under Secretary of Defense for Acquisition, Technology and Logistics, issued a memorandum to the Service Acquisition Executives re-emphasizing the importance of appropriately using the "award fee" as an effective motivator for excellence in contractor performance. His memo highlighted the areas of quality, timeliness, technical ingenuity, and cost-effective management for seeking performance improvement.

In November 1999, then Deputy Assistant Secretary of the Army for Procurement Dr. Kenneth J. Oscar expressed his concerns to the Army acquisition community that award fees issued to contractors are not commensurate with their levels of performance. As a result of these concerns, the effectiveness of long-standing incentive programs are being re-examined with a fresh view toward realizing greater benefits.

Recently, the Award Term Contracts Incentive Program was launched as a 3-year pilot. This program establishes stable partnering relationships between government and industry to provide long-term sources of quality products and services. In addition to enabling the government to form long-term relationships with proven high-performing contractors, the pilot program also enables contractors to make investments in process improvements that few companies would make when dealing with short-term awards.

One of the first questions people ask concerning this concept is how it differs from award fee. Under award fee, we expect to reward contractors for excellent performance by granting the award fee. However, one of the problems we have experienced in the Army is that contractors often receive award fees for less-than-excellent performance (i.e., good or barely above marginal). According to a recent Army Audit Agency audit conducted at Army commands, it was found that either the contractors' performances were not being evaluated or award fees were granted in spite of less-than-excellent performance.

Under "award term," contractors will receive periodic performance evaluations and scores. Based on these evaluations and scores, contractors may receive contract extensions for excellent performance and cost savings or realize a reduction in the period of performance for not rendering excellent performance.

The award term process is best suited for cost-plus-incentive fee, firm-fixed-price, and fixed-price incentive contracts, particularly in the service arena. Naturally, cost-plus-award fee contracts are excluded from this process because the objective in award term is to achieve a level of performance that other incentives are not achieving. Under the pilot program, the Army expects contracting officers in their respective commands to make the decision concerning contract types that are most suitable for award term application.

During the 3-year pilot phase of this program, contracting activities involved in the pilot will provide status updates to HQDA on an annual basis. Based on lessons learned and feedback from the field, HQDA will determine the merits of institutionalizing this concept.

The preceding article was written by Esther Morse, Director, Procurement and Industrial Base Policy, Office of the Deputy Assistant Secretary of the Army for Procurement.

ARMY AL&T WRITER'S GUIDELINES
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Purpose

To instruct members of the AL&T community about relevant processes, procedures, techniques, and management philosophy and to disseminate other information pertinent to the professional development of the Army Acquisition and Technology Workforce (A&TWF).

Subject Matter

Subjects may include, but are not restricted to, professional development of the Army's A&TWF, AL&T program accomplishments, technology developments, policy guidance, and acquisition excellence. Acronyms used in manuscripts, photos, illustrations, and captions must be kept to a minimum and must be defined on first reference. Articles submitted to *Army AL&T* will not be accepted if they have been scheduled for publication in other magazines.

Length of Articles

Articles should be approximately 8 double-spaced typed pages, using a 20-line page, and must not exceed 1,600 words. Articles exceeding 1,600 words will not be accepted. Do not submit articles in a layout format or articles containing footnotes, endnotes, or acknowledgement lists of individuals.

Photos and Illustrations

A maximum of 3 photos or illustrations, or a combination of both, may accompany each article in a separate file from the manuscript. Please ensure that artwork is accessible for editing and not embedded in the manuscript. Photos may be black and white or color. Illustrations must be black and white and must not contain any shading, screens, or tints. All electronic files of photos must have a resolution of at least 300 dpi (JPEG or TIFF). If they do not meet this requirement, glossy prints of all photos must be submitted via U.S. mail, Fedex, etc. Photos and illustrations will not be returned unless requested.

Biographical Sketch

Include a short biographical sketch of the author/s that includes educational background and current position.

Clearance

All articles must be cleared by the author's security/OPSEC office and public affairs office prior to submission. The cover letter accompanying the article must state that these clearances have been obtained and that the article has command approval for open publication.

Individuals submitting articles that report Army cost savings must be prepared to provide detailed documentation upon request that verifies the cost savings and their reinvestment. Organizations should be prepared to defend these monies if higher headquarters has a higher priority for them. All articles are cleared by the Acquisition Support Center.

Submission Dates

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January-February	15 October
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May-June	15 February
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November-December	15 August

Submission Procedures

Article manuscripts (in MS Word) and illustrations/photos (300 dpi JPEG or TIFF) may be submitted via e-mail to harvey.bleicher@us.army.mil, or via U.S. mail to the address in the first paragraph at the top of this page. All submissions must include the author's mailing address; office phone number (DSN and commercial); and a typed, self-adhesive return address label.

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