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ARMY AL&T

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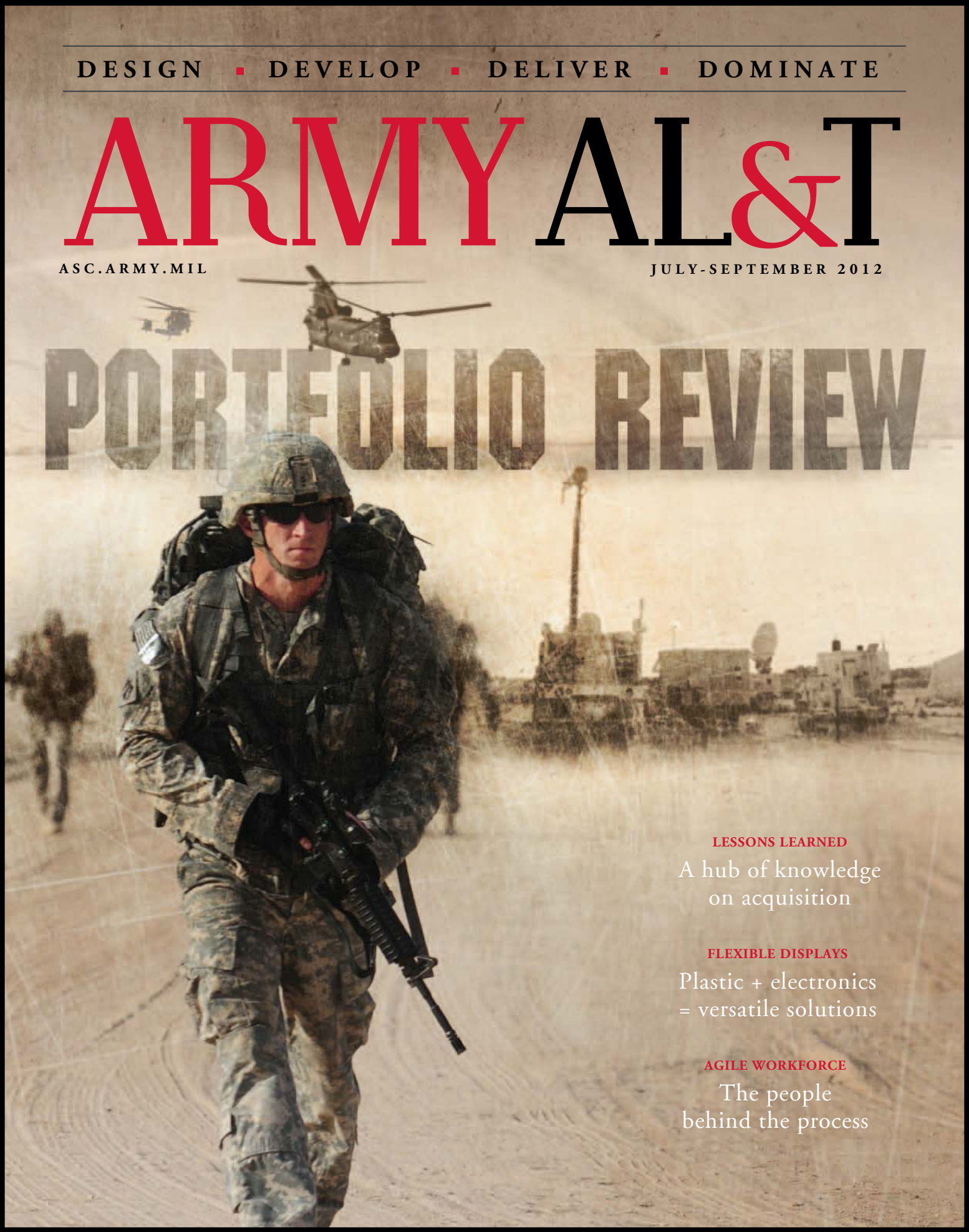
JULY-SEPTEMBER 2012



PORTFOLIO REVIEW

LESSONS LEARNED

A hub of knowledge on acquisition

FLEXIBLE DISPLAYS

Plastic + electronics = versatile solutions

AGILE WORKFORCE

The people behind the process

From the Editor-in-Chief

TALK BACK

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Conference attendance, once a mainstay of proficiency, is being curtailed drastically. Travel, budgets, and even the workforce are being cut to the bare minimum. Ostensibly these "efficiencies" will save money for needed programs that provide our Soldiers with the resources to perform their missions. In these days of fiscal conservation, it seems every little thing matters.

So it is with the Army's Capability Portfolio Reviews, or CPRs. All of the Army program executive officers, project managers, and team leads know about the CPRs. They already compile reports monthly about their project/program status (costs, performance, delivery schedules, etc.) and send the reports up to the Deputy Assistant Secretary of the Army for Acquisition and Systems Management—BG(P) Harold J. Greene, featured in this issue—for review.

Those data feed into the larger CPR process, through a series of reviews, until leadership is satisfied that each of the various portfolios aligns with developing defense and national strategies. In other words: The products meet stated requirements; are cost-efficient, not duplicative; and are on schedule. If not, they could be terminated. Integrated capability portfolios and portfolio reviews are essential to the Army's FY13 plan for balanced and affordable modernization, aligning equipment modernization communities to identify capability gaps and eliminate unnecessary redundancies. Every little thing matters in the CPR process.

If you are not one of the senior leaders mentioned above, you may be thinking, "What does that have to do with me? I'm just a (fill in the blank)." In a word: everything. A "miscalculation" recently reported on the F-35 Lightning II Joint Strike Fighter "cost taxpayers an additional $7.9 billion and delayed overall development by almost three years," according to a June 6, 2012, article in *The Washington Post.*

Everyone in the Acquisition Workforce is personally responsible for ensuring that requirements are clearly stated; alternatives are suggested; equipment performs within projections; costs are contained; and delivery schedules are verified. If not, a red flag could go up, and a project or product that otherwise would continue might never reach the Soldier.

This issue of *Army AL&T* provides an overview of the CPR and how Army Acquisition plays in the process. It all starts with validating requirements, and ensuring that products meet those requirements and are responsive to the Soldier's needs. Developing responsive solutions that meet requirements is also the focus of the article, "Maturing the Agile Process."

Containing costs is another key element of the CPR; "Cost Management Leaders" takes an in-depth look at how to ensure that a product or service can be delivered at an appropriate cost. Businesses also have to manage their product portfolios. Mr. Rainer Michel, VP for Product Marketing and Strategy, Volkswagen of America, discusses how in our Critical Thinking section. Finally, the Efficiencies section highlights successes of the Acquisition Workforce.

I encourage you to share this issue with other acquisition professionals, and to contribute to future issues by sharing best business practices. If you have any comments or suggestions, please contact me at **usarmy.belvoir.usaac.list.usaascweb-army-alt-magaz-ltr@mail.mil**. I look forward to hearing from you.

Nelson McCouch III
Editor-in-Chief

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ARMY AL&T

JULY-SEPTEMBER 2012

FEATURES

ON THE COVER

Navigating a successful Capability Portfolio Review (CPR) includes many important steps. At its core, the CPR gives leadership an understanding of how a given system responds to Soldiers' mission needs; its relationships to other systems; and potential efficiencies within the portfolio. All these questions are central to making decisions that will support mission success.

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Army AL&T Magazine (ISSN 0892-8657) is published quarterly by the ASAALT. Articles reflect views of the authors and not necessarily official opinion of the Department of the Army. Articles may be reprinted if credit is given to *Army AL&T* Magazine and the author.

Private subscriptions and rates are available from: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 (202) 512-1800

Periodicals official postage paid at Fort Belvoir, VA, and additional post offices.

POSTMASTER:
Send address changes to:
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By order of the Secretary of the Army

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1217807

SECURING THE FUTURE

As the Army moves forward with the Capability Portfolio Review process, the focus is to continue finding ways to harvest important capabilities for Soldiers while finding efficiencies wherever possible. Here, U.S. Army National Guard SSG Joshua White, a security force member of Provincial Reconstruction Team (PRT) Farah, pulls security during a road assessment mission in Farah province, Afghanistan, May 9. The mission of PRT Farah is to promote the Afghan government and its ability to resolve local issues and provide security to the people. (U.S. Army photo by SSG Jonathan Lovelady.)

FROM THE ARMY ACQUISITION EXECUTIVE
MS. HEIDI SHYU

'PORTFOLIO' PERSPECTIVE

Provides essential long-term modernization focus

Our central mission is to equip Soldiers with the best weapons and equipment available, in order to maintain a decisive advantage over current and future adversaries. It is a significant responsibility for which strategic focus and reassessment are indispensible. As the writer and well-known futurist Alvin Toffler once noted, "You've got to think about big things while you're doing small things, so that all the small things go in the right direction."

While managing multimillion-dollar acquisition programs, complex contracts, or scientific research projects is by no means trivial, what we do must be tied to an even larger direction.

As we adapt to declining budgets and an evolving defense strategy, it is more critical than ever that we make short-term investment decisions based on a long-term focus. That requires a strategic approach to Army modernization based on a sanguine assessment of current and anticipated threats; a careful review of peer nation capabilities; knowledge of state-of-the art commercial, academic, and government research; and a sound evaluation of competing needs for finite resources. The steps required to achieve the strategy must be expressed over near-, mid-, and long-term horizons.

Most importantly, this assessment must be continuously refined to ensure that our investments, as expressed in S&T research or formal programs of record (PORs), are linked to a broader outlook. Annual determinations of what we can spend against what we need are insufficient; our modernization must make deliberate choices based on a comprehensive investment strategy.

A STEP IN THE RIGHT DIRECTION

As detailed in this issue of *Army AL&T* Magazine, the Army recently began managing acquisition requirements in a manner that looks both within and across "portfolios" in order to strike the proper balance of affordability, productivity, and innovation in key areas. This approach, implemented through Capability Portfolio Reviews (CPR), involves a holistic look across programs and systems to validate military needs, identify potential redundancies, and aid future planning efforts.

These efforts have yielded positive benefits as we adapt to a period of austerity and transition. But this is one step as we work toward a larger direction.

Such questions must also drive the development of requirements for new

WHILE CPRS HELP EVALUATE REQUIREMENTS FOR TODAY'S PORS, THE S&T PORTFOLIO REVIEWS SHOULD HELP DEFINE THE ARMY'S CAPABILITIES OF TOMORROW.

SURVIVABILITY ON THE MOVE
The Ground Portfolio is one of five Army S&T portfolios, the others being Soldier; Air; Command, Control, Communications, and Intelligence; and Basic Research. As part of its S&T efforts to improve ground vehicles, the Army is beginning to explore ways to design vehicles around Soldiers while also increasing the platforms' ever-important protection levels. Here, Soldiers from 5th Battalion, 20th Infantry Regiment, Task Force 1st Squadron, 14th Cavalry Regiment prepare a mine roller before moving out on a convoy to Forward Operating Base Sweeney in Zabul province, Afghanistan, Jan. 12. (U.S. Army photo by SGT Christopher McCullough, 3rd Stryker Brigade Combat Team, 2nd Infantry Division.)

capabilities as they arise. Programs of record must be placed on the best possible foundation for long-term success. This requires robust requirements tradeoffs in planned capabilities in advance, guided by our strategic focus and affordability. To do this, we need the same focus on a larger strategy.

S&T PORTFOLIOS

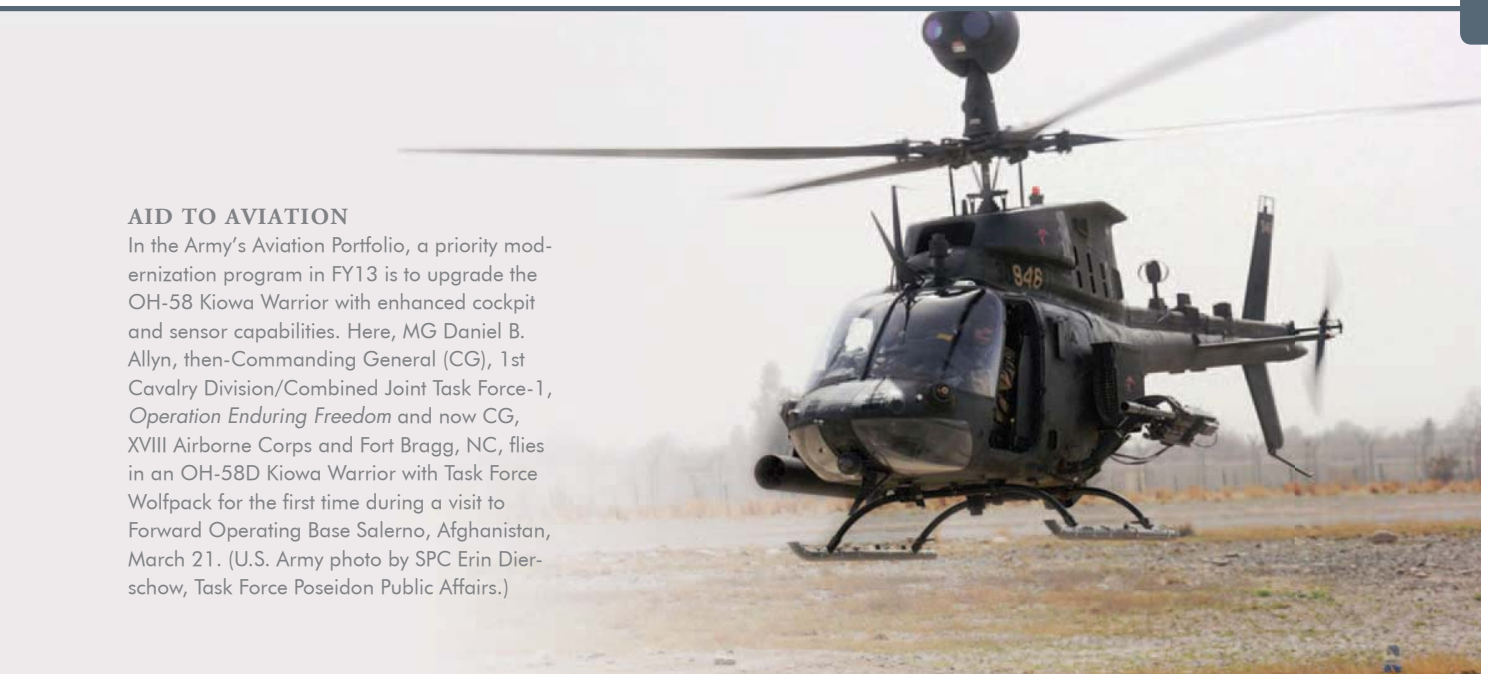
In recent months, we have begun a similar strategic review of Army S&T investments by portfolio. We want to ensure that Army investments in every area—aviation, ground systems, Soldier systems, etc.—serve a broader strategic focus. While CPRs help evaluate requirements for today's PORs, the S&T portfolio reviews should help define the Army's capabilities of tomorrow.

The significance of threat assessments in this area cannot be overstated. In making these choices, the Army ought to be mindful of the defense industry's own research efforts; the same goes for research across universities, Federally Funded Research and Development Centers, and government S&T investment by the Navy, Air Force, and Marine Corps. Our overriding focus should be on Army-unique S&T investments that complement these other efforts and address current and anticipated capability gaps.

CONCLUSION

The key to our long-term success lies in our ongoing development and execution of an overarching modernization strategy. It is truly the "big thing" that helps guide the execution of our resources and mission on a day- to-day basis.

President Eisenhower famously said that plans are useless, while planning is indispensible. While we have an imperfect track record for predicting future needs, the importance of strategic assessment and reassessment is critical to remember as we equip the United States Army to meet its next set of challenges.

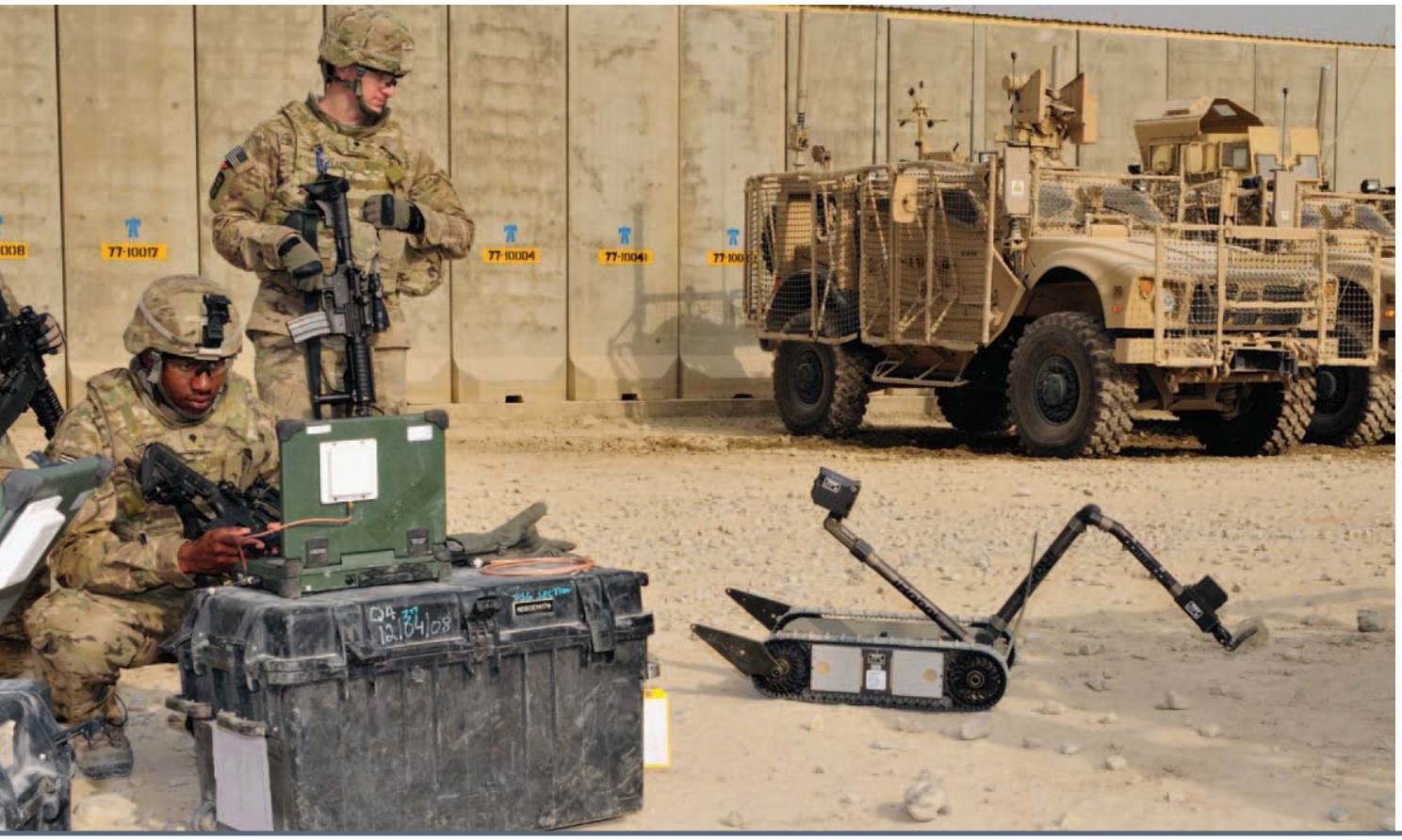


AID TO AVIATION

In the Army's Aviation Portfolio, a priority modernization program in FY13 is to upgrade the OH-58 Kiowa Warrior with enhanced cockpit and sensor capabilities. Here, MG Daniel B. Allyn, then-Commanding General (CG), 1st Cavalry Division/Combined Joint Task Force-1, *Operation Enduring Freedom* and now CG, XVIII Airborne Corps and Fort Bragg, NC, flies in an OH-58D Kiowa Warrior with Task Force Wolfpack for the first time during a visit to Forward Operating Base Salerno, Afghanistan, March 21. (U.S. Army photo by SPC Erin Dierschow, Task Force Poseidon Public Affairs.)

A JOINT LIFESAVING EFFORT

The PackBot Family of Systems, a small robotic platform designed to provide the warfighter with standoff to inspect and clear suspicious objects during improvised explosive device sweeps, is one example of a Joint capability solution. The Army is striving to complement, not duplicate, the S&T efforts of other services, industry, and academia as it addresses current and anticipated capability gaps. Here, 10th Sustainment Brigade Soldiers learn to operate the PackBot during training Jan. 2 at Bagram Airfield, Afghanistan. (U.S. Army photo by SSG Cory Thatcher, 10th Sustainment Brigade Public Affairs.)



DEMYSTIFYING *the* CPR

BG(P) Harold J. Greene discusses the significance of the Capability Portfolio Review process to Army Acquisition

In its in-depth examination of Capability Portfolio Reviews (CPRs), Army AL&T *Magazine had a lengthy discussion May 16 with BG(P) Harold J. Greene, Deputy Assistant Secretary of the Army for Acquisition and Systems Management, on the role of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT) in the CPR process; past CPR successes; challenges; and future impacts. BG(P) Greene also discussed what program executive officers can do to prepare for and benefit from CPRs, and lessons learned from the CPR process. The conversation follows.*

Q. What's the overall purpose of the Capability Portfolio Reviews?

A. From an ASAALT perspective, the overall purpose of the Capability Portfolio Reviews is to allow us to work beyond the individual systems by looking at portfolios or a system of systems in a given capability area. One of the big changes in our Army over my tenure in the Acquisition Corps is that we've really gone from focusing on individual systems to really having to focus on systems of systems, because our systems are interdependent.

What the CPR does for the Army is allow us to take a look at a given system of systems, look at overlaps, redundancies, and capability gaps, and then make smart decisions about trade-offs and where we want to make our investments—trade-offs between quantities of systems, speed of delivery, which particular systems we want to buy, whether we want to invest to solve a particular capability gap or not.

Rather than doing it the way we would have done it perhaps 10 years ago and

look at each individual system in isolation, it allows us to look at a capability area across the entire capability. That's really important for our PEOs, because we're working with them to make the Better Buying Power Initiatives a reality, which really causes us to look at trades to get the best value. And clearly one of the places we want to do that is in the requirements.

So the G-3 leads the CPR … but it allows us in ASAALT, PEOs and PMs, to look across programs or look for opportunities to gain efficiencies and, frankly, to get better value for the Army, the Department of Defense, and the taxpayer—you know, look at the capabilities we're after, look at the materiel solutions that we are working on next to those capabilities, and identify where are our capability gaps, where are our redundancies, and where there are opportunities for trade to get the best value for the precious dollars we have.

And that's really going to be more important as the years go on, because as we all know, we're in a shrinking budget environment.

Q. It's important for the PEOs and everybody in their lane to look at the requirements, make sure a system is at the best value and delivers what is expected. Everyone in the whole chain can interject and say, "Hey, wait. I don't think this is a good requirement." Is that correct? Is that their job, to make sure that their mission does all that?

A. What we're asking our PEOs to do is really manage a portfolio of systems that deliver a capability. So what the CPR enables us to do is to work with our teammates in the requirements community and the resourcing community, the three big systems that run the big A. Acquisition is a team sport, and it's three systems working together—the acquisition system, the requirements system, and the money system—to get to a capability.

Rather than taking a small view and looking at one system, CPR allows us

REFOCUSING PRIORITIES

The 2010-11 Missile Defense CPR recommended that the procurement of the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor (JLENS) program be reduced. The result, in combination with the termination or scaling back of other air missile defense systems, freed funding to network all the systems together. Here, a JLENS aerostat is launched at White Sands Missile Range (WSMR), NM, Feb. 24. (Photo by John Hamilton, WSMR Public Affairs.)

SCALING BACK EXCALIBUR
An early CPR on Precision Fires resulted in a requirement reduction of Excalibur munitions from 30,000 to about 6,300 rounds, resulting in a return of nearly $500 million to the FY13-17 POM and a projected $400 million for the outlying years. Here, Soldiers with the 321st Field Artillery Regiment, 4th Brigade, 82nd Airborne Division test-fire the Excalibur artillery round on Forward Operating Base Salerno, Khost province, Afghanistan, Feb. 28, 2008. (U.S. Army photo by SGT Nicholaus Williams.)

to get the players together in those three big systems and look at how we can optimize what we're doing in the acquisition program to get to those capabilities at the best value for the taxpayer. And then it feeds right into other processes. For instance, it's a natural feeder to the Configuration Steering Board (CSB), which is run by the Army Acquisition Executive (AAE) and allows us to go in and look at the requirements in a particular program and trade off requirements as required for purposes of saving money, accelerating, fielding, or reducing risk in a program. We want to do that with context. We don't want to make a change in a program that will cause a number of dependent programs to have problems or cause a critical capability to fall off the table. The CPR allows us to work with the requirements and the resourcing community to look at what trades are available in the whole portfolio, and then bring those trades in a particular system to a CSB.

ASAALT is really supporting the process by providing technical and programmatic expertise, by identifying areas of possible trade space, and by laying out alternatives to be considered.

Q. How does the CPR process influence the acquisition core mission? Does it change what PEOs are working on in any way?

A. I don't know that it changes what they're working on. What it allows us to do is to put the given system in context of the portfolio and the overarching capability that it's getting at. We have a directive to all of our acquisition workforce to really embrace better buying power and look for the trade space in programs. It's difficult to do that without the context of the other systems that are coming together to provide that capability, because we now have interdependent systems. ... They're all tied together in a system-of-systems construct to get to that capability. So if I want to make trades in a particular program, I need to do that in context of the system of systems. And that's really what you get to in the CPR.

WE'RE TRYING TO DO THE RIGHT THING FOR THE ARMY, FOR THE DEPARTMENT OF DEFENSE, FOR THE NATION, AND GET THE MOST BANG FOR THE BUCK. SO DON'T BE DEFENSIVE, BECAUSE YOUR PROGRAM MAY NOT BE FAVORABLY IMPACTED BY WHAT GOES ON [IN THE CPR], BUT IT'S TO DO THE BEST THING FOR OUR NATION.

Q. What should acquisition workforce members focus their reporting on in these various projects within the CPR's influence?

A. What we need to be reporting on, really, is the capability we're bringing to the table, the risks in the program, and identifying potential trade space in the program.

Q. What CPRs are currently on the table?

A. Right now, the ISR [Intelligence, Surveillance, and Reconnaissance] CPR is working; the Combat Vehicle CPR; Aviation; and Mission Command. Every month, a couple of CPRs will get up to the Vice Chief of Staff, AAE level. So there will be a couple or so that will be on the front burner to go to the Vice Chief, and the AAE will also participate. But there will be other ones at lower levels of staffing that are working their way up. And in a given year, the idea is that we would go through all of the major portfolios at some point during the year, and that would then support senior leader decision making in the POM [Program Objective Memorandum] as well as in acquisition decision forums.

We started this under [then-Vice Chief of Staff of the Army] GEN [Peter W.] Chiarelli about three years ago, and we went through all of them a couple of times with GEN Chiarelli as an Army. And now GEN Austin [Vice Chief of Staff GEN Lloyd J. Austin III] has taken over, and he's started them up again … we've done more than one cycle.

They change over time: Capabilities are accelerated, programs fall behind, funding is changed in programs, the perceived requirements change. So we need to adjust the portfolio. That's why I say we're trying to get to these about once a year to 18 months.

Q. To get into some of the mechanics of the CPR from the PEO perspective, first of all, how do you define a successful CPR from an acquisition point of view, in terms of what sort of metrics you look for, what you hope to generate, and how you define successful reporting processes leading up to the CPR?

A. I would tell you that a successful CPR, from my point of view, is that we have a clear understanding of the context in which our systems are going to get used and the interrelationships between the systems, and we have a focus on the operational capabilities required that enable us to identify the trade space in our programs. As I'm sure you know, all of our program managers and PEOs have been tasked with identifying potential descoping opportunities to yield cost savings and bring them forward in a CSB. And what the CPR enables us to do is to identify and work with our partners in the requirements and the resourcing community to identify those potential descoping recommendations and get their buy-in to those.

So I think a successful CPR is one where, coming out of it, we understand how our systems play together and we've identified possible efficiencies and ways to improve the bang for the buck that we're getting.

What the CSBs allow us to do, in a forum chaired by the Acquisition Executive, is to bring in a program and its requirements and look at requirements that we can descope without breaking the program, to create efficiencies or reduce schedule or risk in the program. So it would be an easing of the requirements. We want to do that in the context of the capability we're trying to provide.

You may, after coming through a CPR, be told, "We can reduce requirements here in either number or operational capability in one system, because there

'IT'S ABOUT EQUIPPING OUR SOLDIER'

CPRs allow ASAALT, PEOs, and PMs to look across programs for opportunities to gain efficiencies and to get better value for the military and the taxpayer. Here, SPC Paul Tabor, Team Leader with 1st Battalion, 501st Infantry Regiment, 4th Brigade Combat Team (Airborne), 25th Infantry Brigade, Task Force 4-25 scans his sector of the perimeter May 28 in the Tani District of Khost province, Afghanistan. Team Delaware was on an Afghan National Army-led patrol of villages. (Photo by SGT William Begley, 11th Public Affairs Detachment.)

is redundancy and that capability is provided someplace else," or even, "We're willing to accept the risk here—operational capability risk—because that's not as important as some other capability the Army wants to spend its money on."

Q. Is there an element of reporting involved in terms of success? Have you seen optimal approaches to reporting in preparation for these CPRs?

A. Well, the process that one goes through to prepare for a CPR starts with a Council of Colonels, and there may be multiple Councils of Colonels, then one- and two-star leaders and a four-star session that will be chaired by the Vice [Chief of Staff] but attended by the Acquisition Executive. What's critical in the reporting is that our team is working together and forming up issues that need to be resolved at the higher levels.

Clearly the project managers and the product managers that have systems in a given capability set are reporting to their PEOs. The division chiefs who come out of the DASM [Deputy for Acquisition and Systems Management] are reporting to me, and then we're sharing that information across the ASAALT community so that we see the issues that are coming.

We can look at the problems. We can look for solutions, get metrics on the various trade-offs involved, and then fold that up into the one- and two-star forum and then obviously prepare [Army Acquisition Executive] Ms. [Heidi] Shyu as she goes into the session with the Vice Chief of Staff, so we can have a fruitful discussion there.

Q. Could you put that in the context of past CPRs?

A. Let me talk about some successes we've had. One of the earliest CPRs was Precision Fires. The idea was that we had a number of munitions that provide precision fires as well as the precision fires we can get from our Joint partners on the battlefield. So a CPR was done focusing on precision fires, and one of the conclusions that came out of that was that we didn't need to buy as many [M982 155mm] Excaliburs as we had planned.

So we reduced, as an Army, our requirement for Excalibur from 30,000 to about 6,300 rounds. The result of that is that we were able to return about half a billion dollars in the [FY] 13-17 POM that could be used for other Army critical needs. Adding in the out-years, it got it up to almost $900 million that could be returned for other needs. So that's pretty important.

In the context of the budget environment we're going into, we could talk about the Air and Missile Defense Capability Portfolio Review in 2010, which flooded over into 2011. We looked at all of the capabilities in the Air and Missile Defense Portfolio, and the result of that was a focus on getting to an Integrated Battle Command System for air and missile defense; recommending the termination of the MEADS program, the Medium Extended Air Defense System, and the SLAMRAAM program, the Surface Launched Advanced Medium Range Air-to-Air Missile; and reducing the procurement of JLANS, the Joint Land Attack Cruise Missile Defense Elevated Netted Sensor program. The net result was that it freed up the resources that we needed to really get all of our air missile defense systems networked together.

The CPR also allowed us to fund a Service Life Extension Program for the Stinger missile, and retain funding for a number of other missions and cruise

missile defense and counter-unmanned aerial vehicle systems. So the system really worked. Rather than just looking at it a program at a time and saying do we have enough in any one particular program, it allowed us to look at the threat, the capability required, and the systems coming up against it, and to rebalance our portfolio to reflect the revised priorities.

Q. What would you say the critical lessons learned are?

A. The first one is: Prepare in advance. Gather the team, gather the metrics, the studies, and the programmatic information on the various programs in the portfolio, and then participate in the process with that information. And don't be defensive. We sometimes have a tendency to go into forums in the Building worried about our program. And to some extent, PEOs and PMs coming into this process need to be somewhat selfless.

We're trying to do the right thing for the Army, for the Department of Defense, for the Nation, and get the most bang for the buck. So don't be defensive, because your program may not be favorably impacted by what goes on there, but it's to do the best thing for our Nation.

The other thing I do is view the CPR as an opportunity. It's an opportunity to look at our portfolio and identify areas for savings that we can turn into better buying power.

And third, I would use it as an opportunity to really sharpen our understanding of the operational requirements—how they're met and how the various systems fit together. A lot of times, I think we look at this as just one more bureaucratic thing that's put upon us, but this is really an opportunity to work together with the community to get the best result possible.

Q. What kind of lead time is required for this sort of preparation?

A. Well, we have the schedule for the CPRs out for the year. It always changes. I would suggest that the PEOs and the PMs need to be preparing with their counterparts in the G-3, the G-8, and then ASAALT two to three months in advance to start gathering the materials and be ready for the Council of Colonels. And then that will lead to the one- and two-star and obviously to the four-star and equivalent engagement.

Q. Is there any sort of guide to preparing for a CPR? Is there any place where these lessons learned have been integrated or codified?

A. I'm not aware of it, but we are working at ASAALT to develop a repository for acquisition lessons learned. (See related article on Page 92.)

Q. Do you have any closing words of advice for PEOs in preparing for CPRs?

A. My No. 1 piece of advice for the PEOs is to understand our boss. Ms. Shyu is an engineer by trade, and she is very interested in the analytics that underpin the trade space between the various programs and options. My recommendation to PEOs would be to dust off the analytics and understand clearly the analytics that underpin your systems and the trades that they enable, because that's really what she's looking for. She's looking to bring an engineer's view to these deliberations, and really focusing on the underlying analytics so we can make smart trades.

CPR's really got to be talked about in the context of how we fit it into getting capability to Soldiers in the field. So it feeds other processes: It feeds CSBs, it feeds milestone decisions, it feeds POM deliberations. And you know, Ms. Shyu, with Tom Mullins [Thomas E. Mullins, Deputy Assistant Secretary for Plans, Programs, and Resources] as Executive Agent, is one of the co-leads for the EE and the SS peg, the equipping peg and the sustainment peg. And those pegs and their deliberations are both informed by what goes on in a CPR in the trades. The decision's made there on what capabilities to pursue and in what quantities.

There is a method to the madness, if you step back and you look at it from the perspective of the senior leaders. I know it's sometimes very difficult, when you're down in a program office, to understand why we're going through the drill. But when you look at it from the top down, it makes sense. You may not always like the result. You may find it very negative because you're very—you know, we have a tendency to take ownership in our products, and we should take ownership and be proud. But we can't let that get to the point that we miss the forest for the trees. It's not about our program. It's about equipping our Soldier with the best kit we can for the dollars we have.

And there are always going to be trades, because we can't afford everything, all the time, everywhere. And what the CPR process and the CSB processes and the PPBE [planning, programming, budgeting, and execution] processes and the trade-offs do is allow us, in an informed way, to make those trades. …

You really have to step back and say, it's not about my program. It's about service to the Nation and about giving the capability to the great Soldiers we put out there on the battlefield. And if you look at it from that perspective, it makes a lot more sense.

A STRONG LENS

With Capability Portfolio Reviews, Army takes a holistic look at the health and effectiveness of acquisition programs

by Margaret C. Roth and Nelson McCouch III

For all the information it encompasses, the Capability Portfolio Review (CPR) is not just another data drill.

On the contrary, the CPR is the Army's most comprehensive tool to date for validating, modifying, or terminating Army programs. Integrated capability portfolios are the foundation for balanced and affordable modernization, as outlined in the *Army Equipment Modernization Plan 2013* (online at **https://www.g8.army.mil**). Each CPR takes a holistic, Armywide view of program requirements in the context of the threat and Army strategy, weighing capabilities aganst what is needed and priorities against what is affordable (see Figure 1). In the process, the CPR looks within and between programs to find efficiencies and redundancies.

Since the CPR was established officially in February 2010, the results have been tangible: cost avoidance and/or savings of more than $9 billion in materiel over the Program Objective Memorandum (POM) for FY13 through FY18, as the Army canceled or scaled back programs including the Non-Line of Sight Launch System, Surface Launched Advanced Medium Range Air-to-Air Missile, Multi-Mission Unmanned Ground Vehicle, and M982 155mm Excalibur round.

But the CPR process also facilitated development of needed Army strategies, such as for the Ground Combat Vehicle and Tactical Wheeled Vehicle. And it has informed shifts of priorities within the Soldier and Fires portfolios.

As DoD and the Army place growing emphasis on finding efficiencies, CPRs are becoming an increasingly important focal point for the health and future of acquisition programs, including spending priorities, research and development, acquisition, and life-cycle sustainment. *Army AL&T* Magazine interviewed key players in the process to explore the mission and mechanisms of CPRs.

IT STARTS WITH REQUIREMENTS

"It's not an acquisition forum. … It's primarily about requirements and prioritization," said Dr. David M. Markowitz, Technical Advisor to the Deputy Chief of Staff, G-3. The Under Secretary of the Army and Vice Chief of Staff of the Army (VCSA) have oversight of the CPR process, while the G-3/5/7 is responsible for implementation and making recommendations. (See "How the CPR Works" on Page 18.)

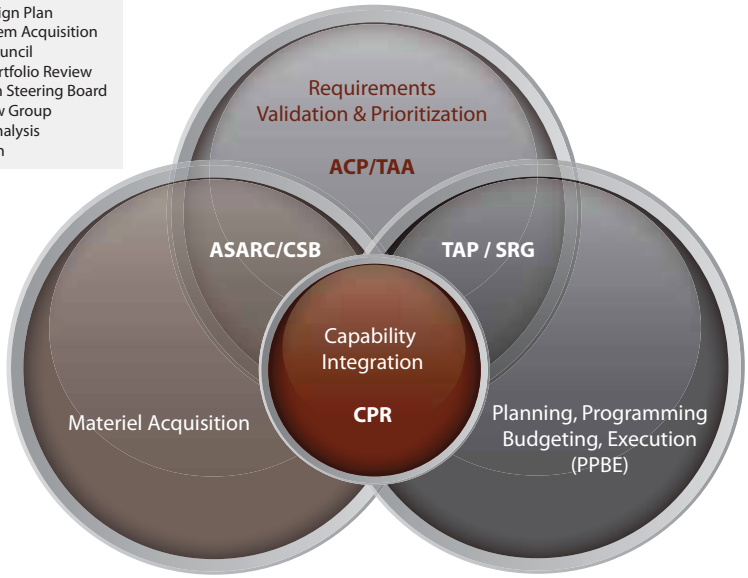
"The starting point is determining what's the requirement. What documents the requirement? Is it a valid requirement?" said Theresa M. Sherman, Division Chief, Capability Portfolio Review and Integration, G-3/5/7.

"And then you look across the DOTMLPF [Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities] and see, have we accepted too much risk or can we take more risk; are we still in sync with the need, with the threat? Do we have any gaps or redundancies? What are our priorities within these bins that are part of this portfolio? … Where do we anticipate the threat will be, and where do we want to go over time? What's the strategy?"

Capabilities Integration

Figure 1

ACP – Army Campaign Plan
ASARC – Army System Acquisition Review Council
CPR – Capability Portfolio Review
CSB – Configuration Steering Board
SRG – Senior Review Group
TAA – Total Army Analysis
TAP – The Army Plan



CPRs provide a single forum that integrates requirements, acquisition, and PPBE processes

The purpose of the Capability Portfolio Review (CPR) is to take a holistic, Armywide view of program requirements in the context of the threat and Army strategy, weighing capabilities against needs, and priorities against what is affordable. (SOURCE: Army G-3/5/7.)

Answers to these questions depend in large part on information provided by the U.S. Army Training and Doctrine Command (TRADOC) and program executive offices (PEOs). (See "PEO Perspectives" on Page 20.)

"What are the relative priorities, and what are you willing to trade?" Markowitz added. "After you do those prioritizations, is the portfolio healthy for the long term? Or do you still have problems you can't solve?"

For example, Markowitz said, the Army looked at armor for its trucks. "Now we can't afford armored trucks across all 230,000 trucks, so some are going to have be armored, some are armorable with add-on kits, and some are just going to be unarmored. So how do you apportion that risk? And then if you have to build armorable [trucks], what is an affordable cost to keep the Army healthy in its truck modernization over time?

"We've worked very hard to get to what is that sweet spot in terms of protection requirements. … And we traded off transportability for protection to keep the platform affordable, so the Army had an affordable tactical vehicle strategy."

A HOLISTIC APPROACH

The CPR has evolved in response to a desire among Army leadership for a more comprehensive view of program requirements and capabilities.

The original Army Requirements Oversight Council (AROC) process had two parts: a strategic capability review and approval of individual requirements. It did not prioritize individual requirements within portfolios. By the end of 2000, VCSA-level AROCs had declined as Future Combat Systems dominated Army modernization.

In 2009, the G-3 implemented a series of one- and two-star AROCs to look at requirements more comprehensively. Enactment of the *Weapon Systems Acquisition Reform Act* in May of that year spurred more systematic program review.

The law required Configuration Steering Boards (CSBs) to review requirements for each Acquisition Category I program; the Army Acquisition Executive and VCSA would co-chair the CSB.

Leveraging the idea of one- and two-star AROCs, the G-3 proposed a holistic portfolio review process to the Vice Chief. In February 2010, the Secretary of the Army directed a one-year trial of the CPR process. Then-VCSA GEN Peter W. Chiarelli expanded it considerably beyond just a requirements group to involve the resourcing and acquisition communities more.

Since then, the CPR process has grown to encompass elements of both the Operating Force and, less successfully because of difficulties with scope, the Generating Force. CPRs have shown that the process can address a key challenge of the Joint Capabilities Integration and Development System, namely that the Army is Soldier-centric, not platform-centric.

> "WHAT ARE THE RELATIVE PRIORITIES, AND WHAT ARE YOU WILLING TO TRADE? AFTER YOU DO THOSE PRIORITIZATIONS, IS THE PORTFOLIO HEALTHY FOR THE LONG TERM? OR DO YOU STILL HAVE PROBLEMS YOU CAN'T SOLVE?"

"It's difficult to marry up national strategy to individual requirements within the Army," Markowitz noted. "We're much better at marrying national strategy to formations and units: How many brigades does it take, how many corps, divisions? That's a very clean map, but to come back down to something like an enabler, like equipping, it's kind of a different lens."

In addition to validating, modifying, or terminating requirements, the CPR process allows the Army to:

- Develop a baseline understanding of all requirements.
- Ensure that funds are programmed, budgeted, and executed against validated requirements and cost- and risk-informed alternatives.
- Revalidate portfolios through an examination of combatant commanders' operational needs, wartime lessons learned, Army Force Generation, emerging technologies, affordability, interest, and opportunity.

DIFFERENCES AMONG PORTFOLIOS

The Army has established 11 Operating Force CPRs and currently two CPRs for "Special Topics," loosely aligned with the Generating Force (see Figure 2).

The Operating Force CPRs are: Mission Command; Aviation; Intelligence, Surveillance, and Reconnaissance; Movement and Maneuver; Fires (Indirect); Network; Fires (Air and Missile Defense); Assured Mobility and Protection; Sustainment (Transport); Sustainment; and Soldier. The Special Topics are Training and the Organic Industrial Base.

Each portfolio poses its own challenges, Markowitz said, and the CPR process recognizes these differences.

For example, he said, "Some portfolios have a better longer-term view or strategy of where they need to be in the future than others. I think Aviation has a better long-term view, and that's one where we have to have a steady vision because it takes a long time to develop an aircraft. So they have a long-term view of, say, the joint multi-role aircraft—how to balance Apache, Black Hawk, and Chinook recapitalization rates with investments in the future."

Another portfolio that stands out, for a different reason, is Network, Markowitz said. "You have such a high technology turnover. The basic question is, why have a 10-year development plan when technology is going to outpace it in two or three years? The NIE [Network Integration Evaluation] … is now trying to move away from longer-term development to shorter-term development, which is appropriate." (See related article on Page 22.)

The Special Topics, too, have unique considerations, he said. The Training Portfolio, for example, encompasses institutional training, individual training, and collective training. "What are the requirements for each? Are they in balance? One of the major issues is, do we have the right balance in individual and collective training between simulations and live?" Markowitz said.

LESSONS LEARNED

In the past six months alone, the Army has conducted at least 20 CPRs; most portfolios have undergone more than one CPR. This fall, the G-3 will re-synchronize with emerging Army 2020 Strategy guidance and POM 15-19.

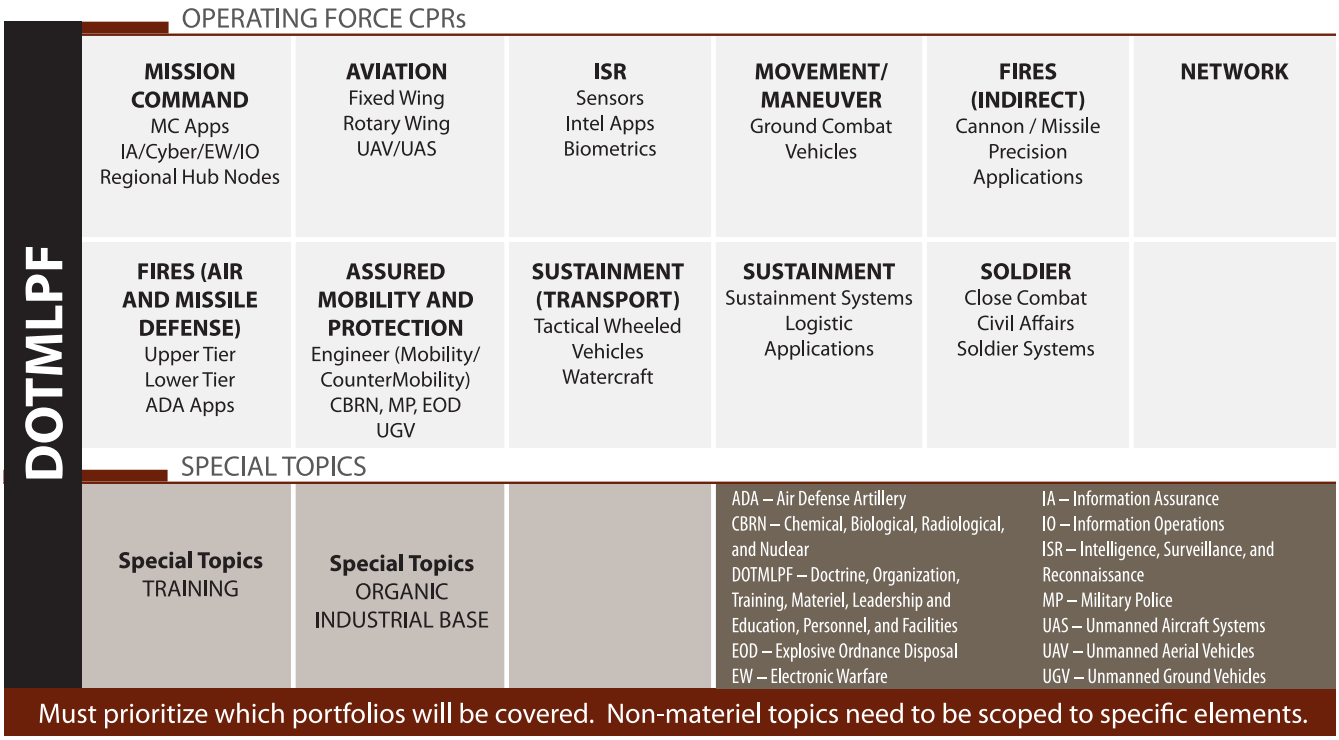
While CPRs have accomplished a great deal, especially in revalidating requirements and identifying redundancies, there is room for improvement in the CPR process, said Markowitz, who singled out two areas: sustainability, and science and technology (S&T).

"We haven't done very well at overall sustainability, longer-term fleet management and life cycle," he said. "We've done that for a few of the portfolios but not holistically across all."

In S&T, "we've also not done very well because that really has to do with the longer-term portions" of the review. "It's

Portfolio Composition

Figure 2



The Army has established 11 Operating Force CPRs and currently two CPRs for "Special Topics," loosely aligned with the Generating Force. Each portfolio poses its own challenges, and the CPR process recognizes these differences. (SOURCE: Army G-3/5/7.)

really not too sure how much S&T is a part of requirements, as opposed to just acknowledging that there's a gap or priority area and let S&T involvement or direction be done someplace else."

Overall, Markowitz said, "We're still revising as we're institutionalizing what we need."

For more information, see Addendum K, Modernization, *of the* 2011 Army Posture Statement, *online at* **www.army.mil/aps/11/**, *and* Capability Portfolio Review, *the September 2010 DEFENSE REPORT published by the Association of the United States Army's Institute of Land Warfare, online at* **http://www.ausa.org/publications/ilw/Documents/DR%2010-3%20CPR%20v2%20web.pdf**.

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How the CPR Works

by Margaret C. Roth

At the head of the Capability Portfolio Review (CPR) process are the Under Secretary and Vice Chief of Staff of the Army. Running the CPR is the G-3/5/7, as the staff proponent for organizing and executing it. Contributing information on the portfolios are representatives from across the programmatic spectrum, including the U.S. Army Training and Doctrine Command (TRADOC); the program executive offices (PEOs); the Deputy Chief of Staff, G-8; and the testing community.

"We run the meetings, get the schedule, get the subject-matter experts together, and identify the major issues," said Dr. David M. Markowitz, Technical Advisor to the Deputy Chief of Staff, G-3. "There's a series of O-6 meetings, one- and two-star [meetings], and, when we can, a three-star will meet with the Vice Chief (see Figure 1). At that point, he said, "most of the work is done," namely a detailed review of the portfolio with particular attention to selected issues.

"We try to get from [TRADOC] what are the requirements, and how old; revalidate them; and try to find some form of strategic context so you could look at importance and redundancy to help stack them and there would be some form of strategy upfront," Markowitz said. For instance, for a missile defense portfolio, the initial focus would be on the range of threats, then on the needs of the force, resourcing, and how much the systems cost. This information, in turn, helps in determining how many of each system the Army needs and how quickly the Army needs to recapitalize it, he said.

Other considerations include industrial base impacts, program schedules, and synchronization across the portfolio. "And then we identify issues: Is something out of sync?" he said.

Finally, as the DOTMLPF (Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities) is applied to each of the systems, the doctrine piece is validated, for example, and is then refined in the series of meetings at successively higher levels until it gets to the G-3. "And then you see that final body of work and you say okay, the doctrine is validated," Markowitz said.

MAKING RECOMMENDATIONS

"We then provide a recommendation, or present the status of the portfolio and its health, to the Vice. Really what we want is a valid approval of what we have done in terms of prioritization, and then a recommendation on overall portfolio strategy: 'Is this the right area to take risk, or not? Are these really the right issues we need to solve in the near term or longer term?' "

The Vice Chief, in turn, presents the recommendation to the Under Secretary, sometimes after several sessions with the staff. Generally, Markowitz said, when the Under Secretary approves a recommendation, it will go to the Chief of Staff for approval. Ultimately there may be a need to modify the requirement, initiate additional review, or pursue DoD support to change the program.

A PRINCIPLED PROCESS

Underpinning the CPR, and reinforced by the command environment, are a commitment to the process, discipline, accountability, questioning assumptions, and fiscal responsibility.

"If certain elements of requirements are driving costs to be unaffordable—which is subjective, depending upon priority—are you feeding that back to the requirements community to make sure there are good, cost-informed trades?" Markowitz said. "If this is really [a system's] purpose in the broader context, can you make this thing cheaper? Can you provide it more widely across the Army at a better rate?"

A hypothetical alternative, he said, is to "come back and say, 'Because of the transportability requirement and this armor requirement, I can't get to that cost. I understand how the overall portfolio is now becoming unaffordable, because

these two requirements are hard to meet simultaneously. So I've got a problem.'

"It's important for the PEOs to say, 'I've got a problem,' to say, 'I can't get you both,' " Markowitz said. For example, the requirements for a vehicle might say that it needs to go 58 mph over road, "but the feedback that the PEO is getting from industry is we can do that, but it's going to make it cost $250,000 more a copy—but if it's only 50 mph, I can save you a quarter of a million dollars because I don't have to have this monstrous engine and this monstrous transmission."

The G-8 provides information on costing and affordability to support the CPRs, he said, "but that normally comes directly from the PEOs. Also, if there are issues or emerging technologies, we will often get that directly from the PEOs." The CPR process "is meant to be very open," Markowitz said. "It's all centered around what's the best way to provide the most capable, cost-effective capability?"

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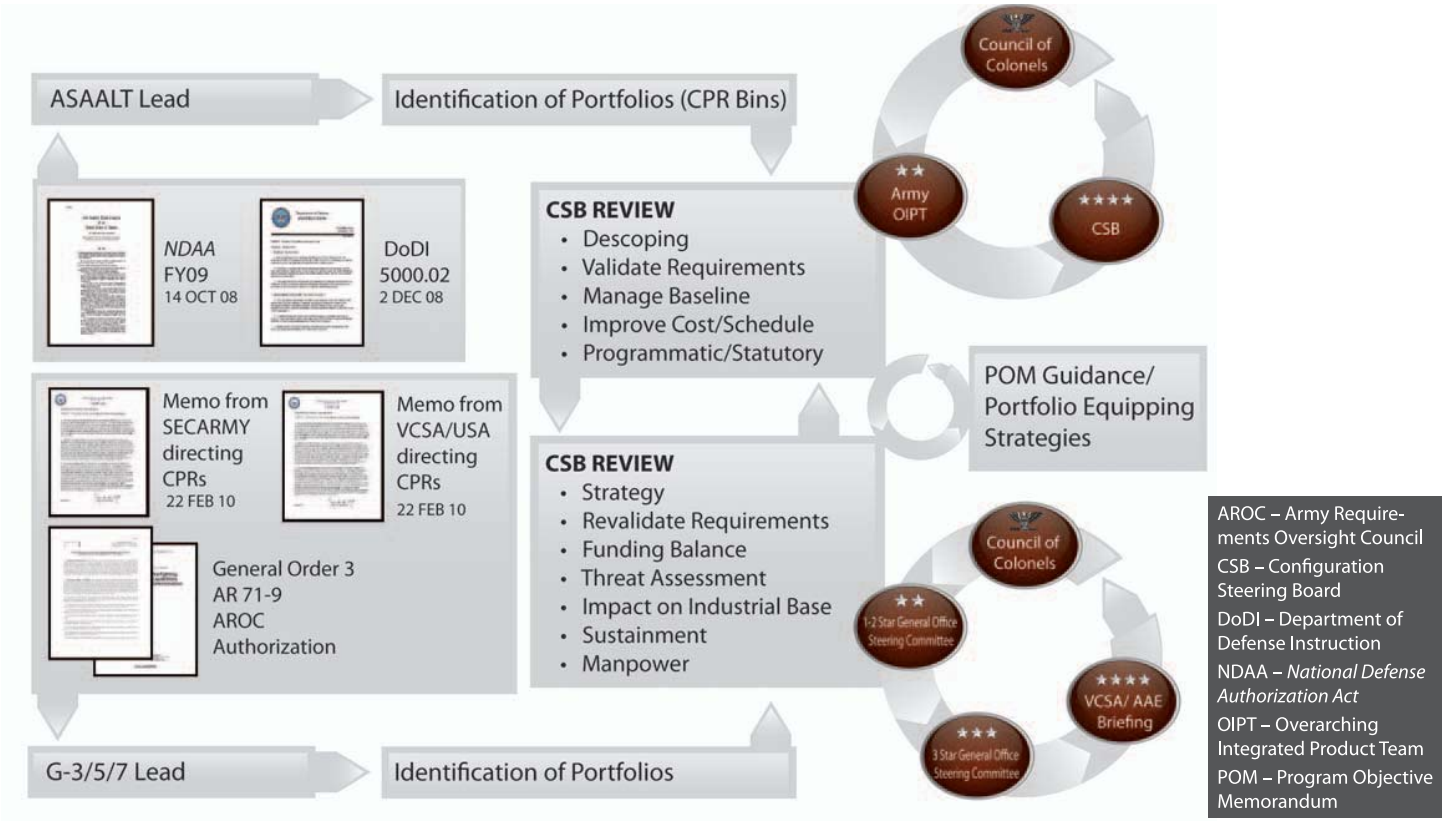
CPR Process

Figure 1



The CPR process, established officially in February 2010, has evolved. Former Vice Chief of Staff of the Army GEN Peter W. Chiarelli expanded it considerably beyond just a requirements group to involve the resourcing and acquisition communities more. Now CPRs involve multiple tiers of leadership from the requirements, resources, and acquisition communities. (SOURCE: Army G-3/5/7.)

PEO Perspectives

by Margaret C. Roth

Army AL&T Magazine approached the program executive offices (PEOs) with this question: What advice can you offer other PEOs on preparing for and participating in CPRs, given your pivotal role in the process? We received a wealth of advice to share, primarily in three areas: Coordinate, both within your portfolio and with other CPR participants; know the issues; and bring good data. Here are the details.

COORDINATE

"The most important part of the CPR process is to ensure that all the stakeholders within your portfolio speak with one voice," said MG Tim Crosby, Program Executive Officer Aviation. "In aviation, we've formed what is called the Six-Pack, a gathering of all the stakeholder leadership involved in Army Aviation," including Crosby; MG Anthony G. Crutchfield, Commanding General (CG), U.S. Army Aviation Center of Excellence and Fort Rucker (AL); MG Lynn A. Collyar, CG, U.S. Army Aviation and Missile Command; COL Patrick E. Tierney, Aviation Director, G-3/5/7; MG Kevin Mangum, CG, U.S. Army Special Operations Aviation Command; and John Shipley, Principal Advisor to Army Special Operations Aviation. The Six-Pack meets once a week, via video teleconference or telecon, to discuss positions and agree on a path forward.

MG Tim Crosby
Program Executive Officer Aviation

"The decisions that have resulted from the Six-Pack meetings were instrumental in the success of Army Aviation during the CPR process," Crosby said, ensuring that the Aviation Enterprise spoke with one voice and assuring the Army leadership that each of the positions taken had already been vetted and re-vetted with those who would be affected. "Our weekly discussions also ensured that we have mitigated the risks involved in a balanced, long-range approach that takes a proactive stance to aviation modernization," he said.

PEOs and program managers must actively participate in the CPR process at every level—the Work Group, Council of Colonels, and one- and two-star review—according to BG Jonathan A. Maddux, Program Executive Officer Ammunition, who advises PEOs to coordinate with stakeholders to implement a CPR-like process across all Acquisition Category III programs within their portfolios. The process should identify opportunities to descope requirements, terminate programs based on capability redundancy, and/or optimize production quantities. Implementing these efficiencies can free up resources to support the Army's short-, mid-, and long-term priorities vetted during the CPRs, Maddux said.

Jennifer Zbozny
Chief Engineer in PEO Command, Control, and Communications – Tactical

Outside the PEO's own organization, it is important to ensure proper coordination with the other stakeholders in advance of the CPR, specifically those from U.S. Army Training and Doctrine Command (TRADOC), the G-3/5/7, G-8, G-6, and the Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology, said Jennifer Zbozny, Chief Engineer in PEO Command, Control, and Communications – Tactical. "Preparations for the CPR are essential. You must get the message out early to all parties involved and before the main event. A coordinated approach to the CPR will establish clarity in the message of what is being proposed, how it will be executed, and why it is essential to the mission," she said.

KNOW THE ISSUES

Lock down the questions to be answered at the CPR, said Scott J. Davis, Program Executive Officer Ground Combat Systems (PEO GCS). The objective during the limited time allotted to a CPR briefing, typically two hours, "should be to obtain guidance from senior Army leaders with regard to your portfolio. To make the best use of this time, the briefing should be structured by your G-3/5/7 counterparts to provide an initial overview of your portfolio, including the current status, and then focus on key critical issues and questions to be answered.

Scott J. Davis
Program Executive Officer
Ground Combat Systems

"While this may seem like common sense, I have been surprised how often we lack a common understanding of the questions we are asking our senior leaders to answer," Davis said.

Zbozny had similar advice: "It is important to ensure that the plan for focus areas in the Capability Portfolio Review is solid, backed with strong numbers and specific data, detailing exactly how and when it will be executed in the near term."

BRING GOOD DATA

The detailed data needed for a CPR will depend on the program, but as a guideline, Maddux recommended the following: minimum and optimal production rates, life expectancy/shelf life, usage rate in theater, and thresholds that would a trigger Nunn-McCurdy breach, in addition to cost, schedule, performance, and risk data. These data will allow for the early identification of second- and third-order effects of courses of action and recommendations, he said.

Davis noted that two years ago, at the outset of the CPR initiative, PEO GCS did not have sufficient analytical tools to provide a holistic view of its Combat Vehicle Portfolio that would enable Army leaders to make better decisions. "Since then, we have developed, in conjunction with the Army analytical community, the Capability Portfolio Analysis Tool (CPAT), which provides PEO GCS with the ability to evaluate highly complex modernization optimization problems over multiple capability sets of platforms, mission roles, and funding profiles in terms of capability, cost, and schedule. … While we understand that CPAT will not answer every analytical question that arises, CPAT gives us the unique capability to assess our portfolio holistically and support the CPR process." The CPAT was first used to support the CPR process in August 2011, with GEN Peter W. Chiarelli, then Vice Chief of Staff of the Army, calling it "a great tool" and a potential game-changer across multiple portfolios, Davis said.

BG Jonathan A. Maddux
Program Executive Officer
Ammunition

PEO Aviation places a high value on user feedback in framing its priorities, said Crosby. He cited User Conferences in which Soldiers, as well as industry partners, TRADOC Capability Managers, partner nation representatives, and other government organizations' representatives, can ask questions and share lessons learned. Soldiers, in particular, can speak candidly about what works and what doesn't from a tactical standpoint, and provide recommendations on what PEO Aviation can do to improve its systems, allowing the organization "to ensure that as we cut back on resources, we do not cut back on those things that Soldiers need," Crosby said. "These conferences have significantly helped us prioritize our efforts. In prioritizing them, we've been able to take those concerns and feedback and placed them into short-term, mid-term and long-term goals."

PEOs recognize the value of CPRs. "The CPR process has enabled the Army to firmly establish the strategic direction for future warfighting capabilities and codify the strategy in broad, senior-level support across the Army for the programmatic changes necessary to bring strategy to reality," said Maddux, citing the rebalancing of precision fires capabilities that resulted in reducing Excalibur procurement and making $883 million available for other Army priorities.

"We understand that in the current environment of fiscal constraint, we must all share in the responsibility of finding new and innovative ways of acquiring and sustaining our Army Aviation weapon systems smarter, faster, cheaper, and more effectively," adapting plans while avoiding the natural tendency to cut investment programs for the sake of short-term mandates, Crosby said. "Most importantly, we must ensure that as we move ahead, we don't allow the Soldier in combat to do without. We must minimize those impacts and continue to reduce the burden on our Soldiers."

—Compiled by Army AL&T *Staff*

MATURING *the* AGILE PROCESS

Army uses lessons learned from Network Integration Evaluations to institute faster, more flexible acquisition

by LTC Ken O'Donnell

Adaptive behavior is the ability to adjust based on different circumstances and changing conditions. Yet despite our Soldiers' remarkable ability to adapt on the battlefield, the Army acquisition process that supports them has traditionally been anything but flexible.

Organizational and business process barriers, while well-intended, too often prevent us from leveraging current technological innovations and impede success. To meet the urgent modernization requirements of the wars in Iraq and Afghanistan, the Army used the flexibility of contingency funding and operational necessity to deliver capabilities rapidly to the field. With the winding down of those conflicts, the need for modernization remains. The challenge now is to define a process that enables success within the current materiel enterprise framework.

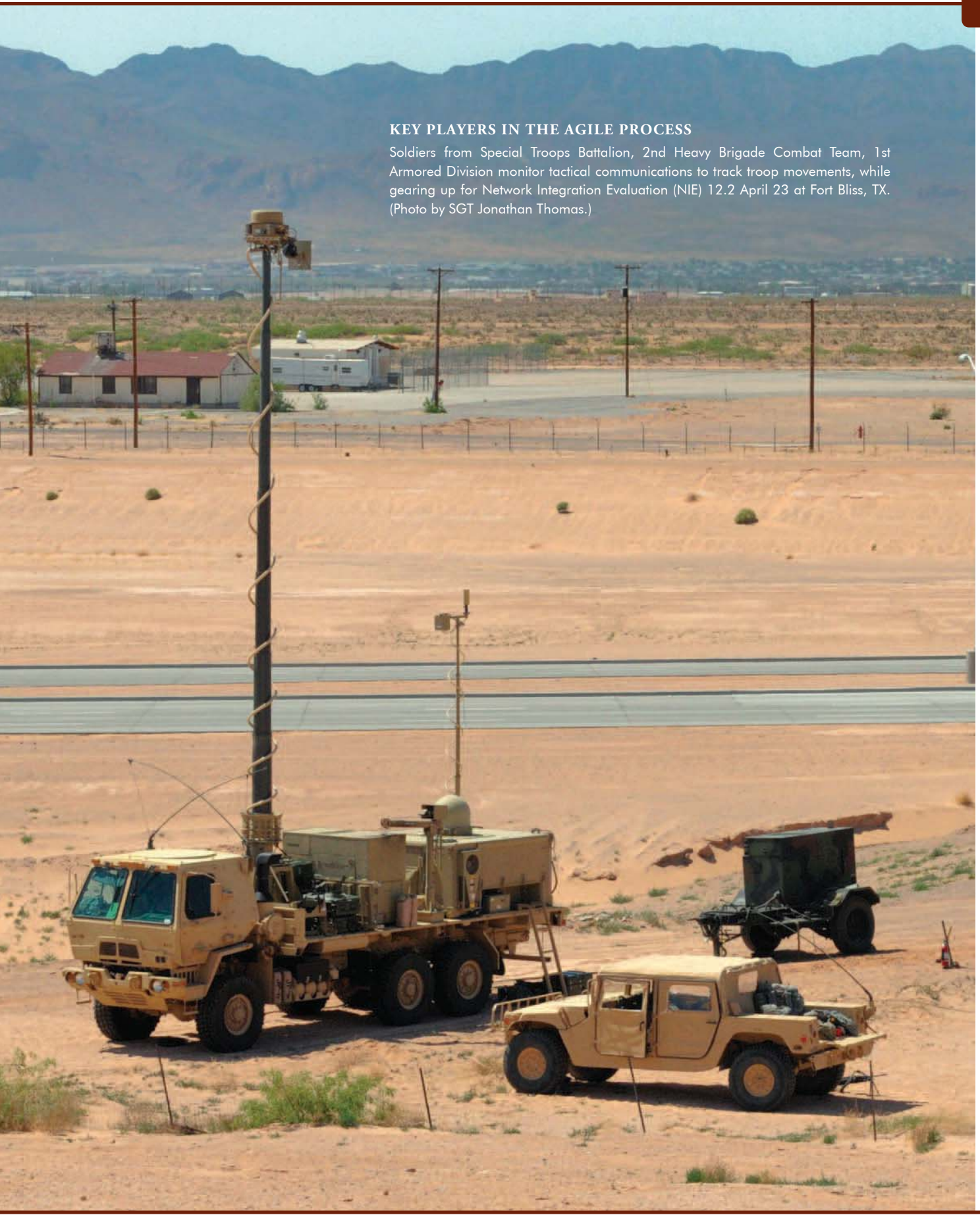
This need for new equipment will be even harder to fill as the defense budget shrinks. To achieve its modernization objectives, the Army acquisition community must radically change the way it delivers capability to the operating forces from start to finish. The Agile Process is the centerpiece of our effort to procure critical capabilities in a more rapid, cost-effective manner, while ensuring technical maturity and integration to a degree that did not always occur over the past decade. Figure 1 on Page 24 shows the phases of the Agile Process.

INTEGRATING THE NETWORK

Currently, the tactical communications network is a top Army modernization priority, so it has become the first target for this change. With network technology making a generational leap at least every 18 months, the Army can keep pace only by synchronizing with industry and leveraging their innovation while adopting an "incremental" approach to modernization through Capability Set Management.

We have started the process by establishing an integrated network baseline made up of existing programs of record (PORs), as well as industry solutions to fill documented capability gaps. This baseline has taken shape through the Network Integration Evaluations (NIEs), semiannual events designed to quickly integrate and mature the tactical communications network. The events use an operational brigade combat team to execute realistic mission scenarios, assessing new network capabilities and determining whether they perform as needed and can interoperate with other systems.

Establishing an integrated network baseline allows the Army to define the technical standards for network infrastructure, applications, and mission command systems that give industry a blueprint toward which to build. A key step will be implementation of the Common Operating Environment (COE),

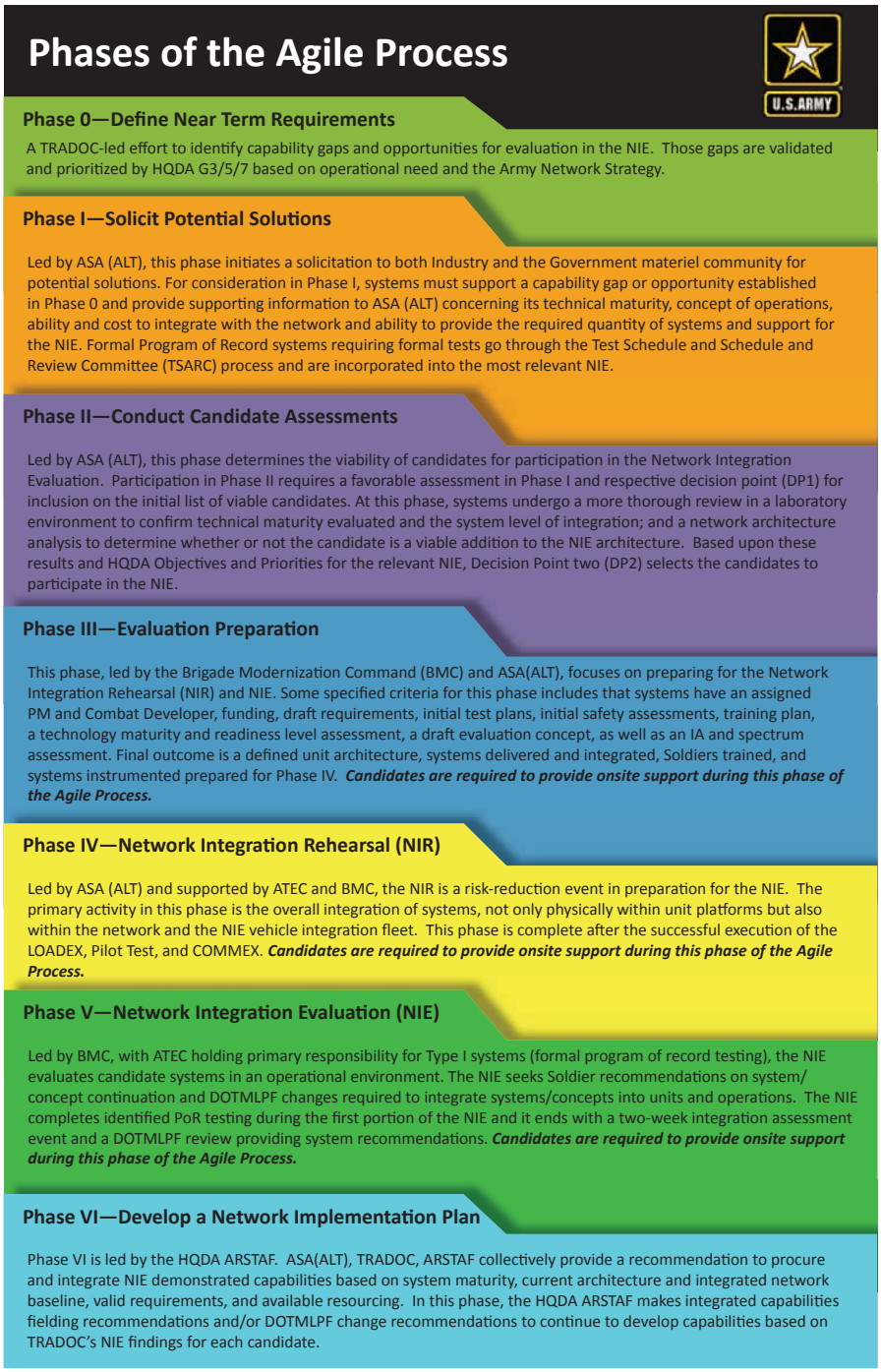


KEY PLAYERS IN THE AGILE PROCESS

Soldiers from Special Troops Battalion, 2nd Heavy Brigade Combat Team, 1st Armored Division monitor tactical communications to track troop movements, while gearing up for Network Integration Evaluation (NIE) 12.2 April 23 at Fort Bliss, TX. (Photo by SGT Jonathan Thomas.)

Phases of the Agile Process

Figure 1



(SOURCE: System of Systems Integration Directorate (SoSI).)

which establishes computing technologies and standards that allow the rapid development and execution of secure and interoperable applications across a variety of computing environments (CEs).

Having established the integrated network baseline and the COE standards, we can then modernize the network through Capability Set Management. Instead of developing a requirement for a single capability and then buying as many as are needed upfront, we will build and procure capability sets.

Treating network capability as a cohesive portfolio, Capability Set Management evaluates the current operational environment, then selects a suite of systems or capabilities and equipment to answer the projected requirements over a two-year period. This incremental modernization will allow the Army to buy fewer but more often, to help ensure that we leverage industry advancements and keep up with the pace of changing technology. These capability sets will be validated through the NIE and delivered in alignment with Army Force Generation requirements to provide the most current capability to those who need it, when they need it.

Incremental modernization will rely on the aforementioned baseline. However, as these POR systems change, they can be managed under a new "IT Box" construct, as described in the recently updated *Manual for the Operation of the Joint Capabilities Integration and Development System* (online at **https://www.intelink.gov/wiki/JCIDS_Manual#Latest_Approved_JCIDS_Documents**), "to provide IS [information systems] programs with greater flexibility to incorporate evolving technologies, and achieve faster responses from requirement validation processes than is typical for other kinds of materiel or non-materiel solutions."

SUPPORTING AGILE ACQUISITION

Heidi Shyu, Acting Assistant Secretary of the Army for Acquisition, Logistics, and Technology, speaks with SPC Allison Ferrone, a radio operator for the 2nd Heavy Brigade Combat Team, 1st Armored Division, about the various systems under evaluation at NIE 12.2 during her visit to Fort Bliss May 11. (Photo by SGT Sean Harriman.)

Leveraging the IT Box, the Army can adjust requirements, procure, and field with minimal delays, incorporating capabilities as they mature or upgrading them as necessary as long as they continue to meet the identified minimum standard.

INSTITUTING THE AGILE PROCESS

Like any fundamental change, the Agile Process has not been implemented overnight. With our industry partners, the Army is learning from the NIE efforts and applying those lessons to improve the process and its outcomes. The Agile Process and the NIE mature with each cycle. Figure 2 on Page 26 shows how the NIE synchronizes with the Agile Process.

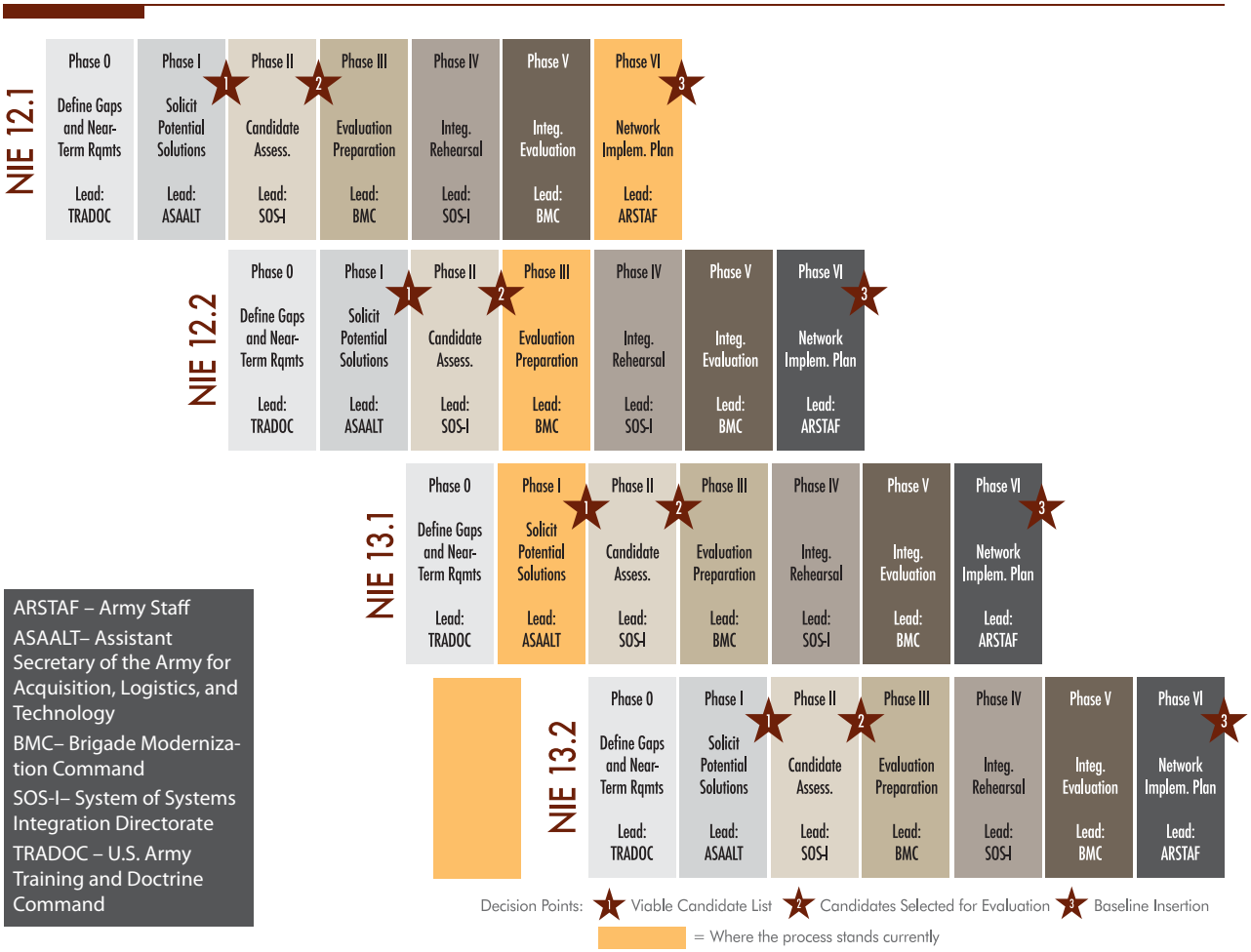
As a result of industry feedback, the Army is committed to ensuring that NIE assessment reports and laboratory feedback are provided within weeks after the evaluations. We know we must provide feedback to industry on system performance in a timelier manner to help industry adjust systems and to better align their research and development resources.

We are also aware of the investment that small and large businesses are making in the Agile Process, and the Army is working processes to help lower the bar for industry to participate in NIE. These include taking steps that could allow the Army to buy prototypes when multiple systems are needed for evaluation; instituting methods to offset the costs of labor and field service representatives; and working with the Army's science and technology community to explore small business grants and development agreements that can help offset small business costs. Flexibility is paramount to maturing this process and developing more than one avenue to evaluate emerging technologies.

The most recent evaluation, NIE 12.2 in spring 2012, was also the first time the Army employed all early phases of the Agile Process. It was the first NIE for which the Army has used new laboratories at Aberdeen Proving Ground, MD, to their full capability, conducting

The Agile Process and NIE Synchronization

Figure 2



NIEs, a series of semiannual evaluations, help the Army keep pace with technological advances and accelerate network modernization, establishing a new construct that challenges long-standing practices. Figure 2 illustrates how the NIEs in FY12-13 synchronize with the Agile Process of network acquisition. (SOURCE: SoSI.)

assessments and mitigating risk before executing an NIE. Over the course of several months, that activity narrowed the list of government and industry candidates participating in the field exercise, and lessened the integration burden for the Soldiers and engineers who execute the NIE at Fort Bliss, TX, and White Sands Missile Range, NM.

We are also making progress in formalizing the precise mechanisms whereby contracts can emerge from the Agile Process. To meet the requirement for full and open competition, the Army is developing a request for proposal(s) process to award contracts to those candidates selected to participate in an NIE. Awarding NIE support contracts will provide flexibility to engage with industry partners to provide the right quantity of

WORKING WITH INDUSTRY

LTC Donovan Rickel, Deputy Commander, 2nd Heavy Brigade Combat Team, 1st Armored Division, talks with industry representatives about testing and evaluating their equipment at the June 1 NIE Industry Day near White Sands Missile Range, NM. (Photo by SGT Adam Ross.)

systems and subsequent level of support, leading to a more valuable NIE. Each NIE support contract will contain a production option that can be exercised for procuring a system in quantities required for fielding to support the next instantiation of the Capability Set integrated network baseline.

This approach allows the Army to remain technologically relevant while showing a commitment to industry development and the Agile Process.

CONCLUSION

Changing acquisition processes will take time, but the Army is absolutely committed to changing how we test, acquire, and field capabilities to the Soldier, starting with the network.

The development of an agile, adaptive acquisition methodology allows the Army to respond to the evolution of technology, leverage the industrial base, and refocus priorities based on operational needs.

This effort will fulfill Soldiers' needs for modernized equipment on the unpredictable, asymmetric battlefields of today and tomorrow.

For more information on recent developments in the Agile Process, go to ***http://www.bctmod.army.mil/SoSI/sosi.html.***

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BUYING *a better* RADIO

JTRS Enterprise Business Model seeks to ensure cutting-edge, interoperable Joint equipment

by LTC Mathew D. Guerrieri

Joint Program Executive Office Joint Tactical Radio System (JPEO JTRS) has pioneered a business model that accelerates delivery of the most technologically advanced radio systems available to Joint service members. The framework, called the JTRS Enterprise Business Model (EBM), motivates healthy competition among industry leaders, ultimately providing cutting-edge capabilities to the warfighter efficiently and affordably.

The EBM does this by incorporating three key aspects:

1. Government-owned standard waveforms (and associated network management software), developed and managed by the Network Enterprise Domain (NED), that enable Joint interoperability among various Software Defined Radios (SDRs).
2. An Information Repository (IR), a virtual library where radio developers (government program offices and industry partners) can access the waveforms.
3. A process to certify Joint interoperability on radio platforms, enabling rapid procurement and fielding.

GOVERNMENT-INDUSTRY PARTNERSHIP

On the government side, the NED Program Office (NED PMO) of JPEO JTRS has developed three Mobile Ad-hoc Networking Waveforms. These include the Wideband Networking Waveform (WNW), the Soldier Radio Waveform (SRW), and the Mobile User Objective System. In addition, the NED PMO has developed Network Enterprise Services, including JTRS Enterprise Network Manager (JENM) and Enterprise Network Services.

The government team is poised to continue to leverage the EBM to deliver unprecedented capability. This revolutionary networking waveform capability brings voice communications, as well as critical data and information such as position location information and still and motion imagery, to the tactical edge via rapidly evolving communication devices.

ENHANCING CAPABILITIES
Paratroopers from 3rd Brigade Combat Team, 82nd Airborne Division use Joint Tactical Radio System (JTRS) radios to communicate during a field exercise at Fort Bragg, NC, March 2, 2011. Through the Army's Network Integration Evaluation (NIE), warfighters have gained an understanding of the enhanced capabilities that JTRS Wideband Networking Waveform and Soldier Radio Waveform (SRW) bring to the battlefield. Service members used the SRW across more than 200 nodes at NIE, and the JTRS Rifleman Radio completed its operational test at NIE 12.1 in November 2011. (Photo by Katie Cain, System of Systems Integration Directorate Public Affairs.)

On the industry side, various companies are interested in competing for opportunities to partner with DoD. Once a radio platform developer downloads and ports a waveform from the IR, that waveform is ready to progress through certification and earn approval to be considered for procurement and fielding. Industry partners continue to show interest; the government will no longer be limited to one prime contractor in developing a traditional radio platform.

Other key components for successful Joint interoperability include application program interfaces and the software communications architecture. These standards ensure appropriate government oversight for Joint interoperability and network integrity while allowing developers to maximize efficiency.

A CHANCE TO COMPARE

Comparative exercises known as "Quicklooks" highlight the current and potential benefits of the EBM. During an SRW Interoperability Quicklook (SIQ) performed at SPAWAR (Space and Naval Warfare) Systems Center Atlantic in May 2011, government test engineers successfully planned, created, and managed an SRW network composed of four different types of SRW-capable radios.

The first was the Handheld, Manpack, and Small Form Fit Rifleman Radio (HMS RR) developed under government contract by the JTRS program. Three commercial vendor radios followed: Harris Corp.'s Falcon III (AN/PRC-117G); ITT Corp.'s Soldier Radio; and Northrop Grumman Corp.'s Software Defined Multi-Function Device.

Later in 2011, participation in SIQs increased by 50 percent. At an SIQ in September, JTRS program test engineers successfully formed a radio network consisting of six different types of SRW-compatible radios, including two developed under contract by the JTRS

IN ADDITION TO THE SUCCESSES BROUGHT ABOUT BY THE EBM DURING NIE 12.1 AND 12.2, DEPLOYED SERVICE MEMBERS ARE REAPING REWARDS FROM USE OF THE EBM.

program: the Ground Mobile Radio and HMS RR. Participating commercial radios included the ITT Soldier Radio-Rifleman, ITT Side Hat Radio, Harris AN/PRC-117G, and the Northrop Grumman Freedom Radio.

REAPING REWARDS

The value of the EBM is also apparent in reduction of SDR Research and Development (R&D) cycle time for SRW, JENM, and HMS RR. Through the Army's Network Integration Evaluation (NIE), which demonstrates WNW/SRW interoperability across multiple radios and networks, warfighters have gained an understanding of the enhanced capabilities that JTRS WNW/SRW networks bring to the battlefield and the process to establish and manage a JTRS WNW/SRW network. Service members employed the SRW across more than 200 nodes at NIE, using six different radios in both the terrestrial and aerial tiers.

In addition to the successes brought about by the EBM during NIE 12.1 and 12.2, deployed service members are reaping rewards from use of the EBM. The Army's 75th Ranger Regiment has completed an operational assessment of the software-programmable Rifleman Radio in Afghanistan.

The assessment highlighted the radio's ability to share combat-relevant information,

OPERATIONAL BENEFITS

A member of the 75th Ranger Regiment wears the JTRS Rifleman Radio. The Rangers have completed an operational assessment of the software-programmable Rifleman Radio in Afghanistan. The assessment highlighted the radio's ability to share combat-relevant information, voice, and data across small units in real time. The JTRS Enterprise Business Model harnesses the radio and the waveform to foster Joint interoperability. (U.S. Army photo.)

MODERNIZING THE NETWORK
The tactical network is the centerpiece of Army brigade modernization, and NIEs are at the center of integrating and maturing the Army's tactical network. Here, Soldiers conduct NIE 12.1 at White Sands Missile Range, NM, Nov. 8, 2011, operating both systems under evaluation and systems under test and employing them in realistic combat scenarios in operationally relevant terrain. (Photo by LTC Deanna Bague, Fort Bliss (TX) Public Affairs.)

voice, and data across small units in real time, marking the first formal combat use of the single-channel, software-defined Rifleman Radio using SRW.

CONCLUSION

The EBM enables modern acquisition, improved logistics, and reduced R&D cycle time by fielding more relevant hardware. It is a product of collaboration between government and industry that has already begun to yield efficiencies benefiting the warfighter and ultimately the Nation as a whole.

For more information, go to ***http://jpeojtrs.mil/****.*

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ENGINES OF THE AGILE PROCESS
It takes an Army of support staff—engineers, technicians, planners, operations experts, and others of all stripes—working full-time and often overtime alongside Soldiers to make the Network Integration Evaluations (NIEs) happen and follow through to apply lessons learned, so that Soldiers ultimately will have the network tools they need to prevail in battle. (Photo by Katie Cain, System of Systems Integration Directorate Public Affairs.)

The 'new' ACQUISITION WORKFORCE

Behind the Agile Process, individuals commit to getting dirty and making it work

by COL Gail Washington

When you think of Army acquisition, you might picture PowerPoint briefings, memos for signature, strategy sessions in the Pentagon, or testimony on Capitol Hill. You probably don't think of innovation in the desert.

But during the past year, a team of military, civilian, and contractor personnel from across the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT) community has expanded what it means to work in acquisition.

As the Army executes Network Integration Evaluations (NIEs) as a key component of the Agile Process, these individuals—engineers, technicians, planners, operations experts, and other staffers of all stripes—are working constantly behind the scenes to ensure a successful transformative process.

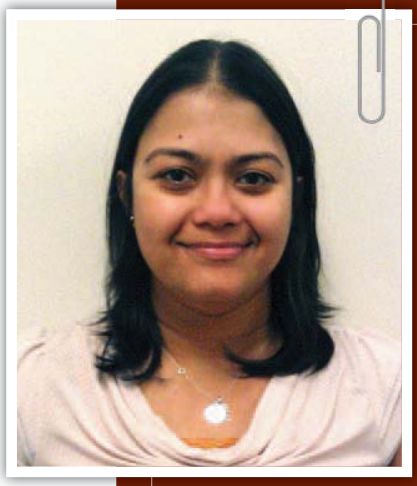
The NIE environment—encompassing Fort Bliss, TX, White Sands Missile Range, NM, Aberdeen Proving Ground, MD, and other sites across the country—poses unique challenges. The sheer number of Army organizations, industry partners, and Soldiers involved makes coordination a monumental task. The pace of the events is brisk, with one NIE executed every six months and others simultaneously in various stages of planning, risk reduction, and follow-up. Add to that the personal sacrifices that our employees make in support of the NIE mission, and it's clear that this job is not for everyone.

Here's what it means to be part of the agile acquisition workforce: Put aside your organizational allegiances for the sake of a better-integrated solution for the Soldier; stay flexible and accept that the process will continue to evolve with each NIE cycle; be willing to learn not just in a classroom or from a policy manual, but from those around you and through your own hands-on experience; and even when the work is mundane or complex, keep in mind the big picture—because in the big picture, the stakes couldn't be higher.

The goal of the Agile Process and NIEs is to field integrated capability sets that deliver unprecedented network connectivity to Soldiers for a decisive

operational advantage. Starting this fall, the first of these capability sets will be fielded to brigade combat teams bound for Afghanistan. Our work to build, integrate, and validate these capability sets through the NIEs will pay huge dividends when Soldiers downrange receive game-changing gear that has been tested and is ready for the fight. As the NIE and Agile Process have matured from a new concept to the Army's official way of doing business, we are standardizing and refining the supporting policies and procedures. These improvements include additional upfront integration before each NIE, a well-trained and multidisciplinary NIE "trail boss" team, and better-defined roles for each member of the NIE triad: the Brigade Modernization Command, U.S. Army Test and Evaluation Command (ATEC), and System of Systems Integration (SoSI) Directorate.

The NIE process still isn't perfect. Like any major change, it is taking time to realize the Army's ultimate vision. But we are making progress, thanks in large part to the individuals of the "new" acquisition workforce. These are some of their stories.



SARIKA RANA

Role and organization: *DA civilian, Program Executive Office Command, Control, and Communications – Tactical (PEO C3T)*

NIEs participated in: *3*

From Sarika Rana's point of view, the NIE is forcing the Army to do two things that are easier said than done: communicate and make decisions.

As an engineer for PEO C3T's Technical Management Division, which builds the network architecture for the NIEs, Rana has seen project managers (PMs) improve their communication dramatically across and within PEO boundaries. She said the NIEs have made it clear just how interdependent different communication systems are, leading to partnerships such as the cooperation among three different PEO C3T PMs to create mission command on-the-move applications for Warfighter Information Network –Tactical Increment 2 in time for NIE 12.1, which took place in fall 2011.

"You would not have had that happen if you didn't have an event like this pushing the groups together and forcing them to communicate," Rana said. "They've been talking before, but arguably NIE drove them to talk better."

The output of NIE and the Agile Process—the synchronized fielding of Capability Set 13—has also added a sense of urgency. With actual deadlines attached to fielding, training, and deployment schedules, the Army is adjusting its network baseline for certain units to ensure that urgent needs are met. If that means sacrificing the 100 percent solution for the moment, Rana said, then so be it.

"It's not as neat as we would like it to be, but it's breaking into manageable chunks, because you can't do all of it," she said. "At least you can start focusing on the things that will be coming up first."

Before working as a DA civilian, Rana worked for MITRE Corp., supporting the Communications-Electronics Research, Development, and Engineering Center and then PEO C3T. She participated in other tests of network equipment, a career path she calls "an interesting circle," but those did not force the community to come together in the same way NIE has, she said. Rana called the NIE environment more challenging—requiring personnel to master the arts of multitasking and patience—but in a way that ultimately will be good for the Army.

"We're now being forced to work together in a greater capacity," Rana said. "That's been really great, because you start seeing a lot of new things that you wouldn't have before."

"IT'S ABOUT THE SOLDIER WHO'S GOING TO GET OUR EQUIPMENT. AND IF WE DON'T DO IT RIGHT, THEY'RE THE ONES WHO ARE SACRIFICING THEIR LIVES."

MARK FRYE

Role and organization: *Contractor for Augustine Consulting Inc., supporting the Nett Warrior program under PEO Soldier*

NIEs participated in: *3*

Mark Frye operates on a simple principle: Give the Soldier what the Soldier asks for.

The Nett Warrior story is by now familiar: Following Soldier feedback at NIE 11.2 in summer 2011, Army leadership quickly restructured the program to take advantage of the latest commercial technology. The new lighter, cheaper version is a smartphone-like mission command system that connects with a tactical radio to provide dismounted leaders with increased situational awareness and mission-related applications.

But even before Nett Warrior became a prime example of NIE success, Frye was applying the same principle. In the development of Land Warrior, Nett Warrior's predecessor, "what the Soldier said mattered," he said. "If a Soldier gave me a piece of information, saying, 'I want this thing called a chem light (app),' the first person I load software on is you because it was your idea anyway," Frye said. "By their own actions, by helping us, they have taken ownership of the process."

In the NIE environment, that concept extends to the Army's entire tactical network. While it's more difficult to complete the feedback loop on such a large scale, Frye said, "it's a consistent learning process" that has improved with each NIE and is now "getting more focused on the ultimate outcome" of fielding Capability Set 13.

"We're going to field a lot of brigades this equipment, so this gives us the opportunity to get it right," he said—"to talk to the Soldiers and say, 'What can we do better for you?' "

As a former Army first sergeant who retired after 22 years on active duty, Frye has been with the Nett Warrior program for more than four years. He is familiar with the fog of war that can descend on the lowest echelons closest to the tactical edge.

"The scariest thing on the battlespace is the unknown," he said. "At team leader and above, a specialty skill is getting all the information they need to alleviate as much of that fog as physically possible."

Nett Warrior does that by eliminating the time delay and human error associated with radio communications, instead giving Soldiers networked handheld devices to exchange messages and digitally track one another's locations. For a young team leader faced with a tough decision in battle, Frye said, that information could make the difference between life and death.

Keeping that outcome in mind helps NIE personnel stay committed despite the long hours in the desert and frustrations of learning a new process, he said.

"You have to want to be able to quickly adapt to people you've never met before, for the sole purpose of integration—to get it right," Frye said. "Because it's not about you or me. It's about the Soldier who's going to get our equipment. And if we don't do it right, they're the ones who are sacrificing their lives."

RICH DAUZ

Role and organization: *DA civilian, SoSI*

NIEs participated in: *3*

Rich Dauz can see the finish line.

Dauz, Senior Integration Engineer for Project Manager Capability Package Integration within SoSI, has been working on integration since Future Combat Systems (FCS), the Army's ambitious effort aimed at fielding entire brigades with an array of interconnected, networked systems including manned ground vehicles, sensors, and unmanned air and ground systems. He joined the program in 2006 while he was still on active duty and stayed with it after he retired from the Army as a master sergeant in 2007.

After FCS was canceled in 2009, Dauz continued to work on the surviving elements for PEO Integration, which later became SoSI. He's seen a lot of "great ideas" from industry that succeeded in the lab but fizzled in the field.

Gradually, however, the NIEs have provided a place to force communication systems to function together in a realistic operational environment—"the network the way it should be working," he said.

"The reality of that network and the threads, how everything's connected—it's getting my trust a lot more than it used to," Dauz said.

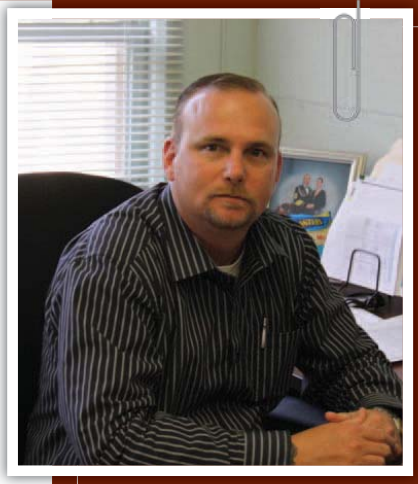
Dauz and his team have a lot to do with that. In mentoring many of the young engineers who configure, install, and troubleshoot network systems in SoSI's Integration Motor Pool at Fort Bliss, Dauz encourages them to bring an open mind and to realize that the challenges and joys of their work will be like nothing they've seen in a classroom or a lab.

"If you open your mind up and let everything flow in that you see out here, you gain tenfold from just being here," he said. "The biggest thing, as I've talked to the young engineers who are coming on board, is to say, 'Tell me something that fascinates you.' "

The work of those engineers to integrate network gear onto various vehicle platforms for NIE 12.2 this spring is helping produce standard configurations and lay the groundwork for the synchronized fielding of Capability Set 13. Now that the Army is finally on the verge of fielding an integrated package of network equipment, Dauz is seeing many years of effort pay off.

"We're actually seeing it come to life," he said.

"IF YOU OPEN YOUR MIND UP AND LET EVERYTHING FLOW IN THAT YOU SEE OUT HERE, YOU GAIN TENFOLD FROM JUST BEING HERE."



DOUGLAS PATTILLO

Role and organization: *DA civilian, SoSI*

NIEs participated in: *3, the first as a contractor supporting ATEC*

If you're looking for the trenches of NIE, find Doug Pattillo's desk.

That's the origin of the Warning Orders, Operation Orders, Fragmentary Orders, and other documents that make the machinery of NIE hum. And the more the NIE grows, the more coordination is needed across the spectrum of government and industry organizations with a stake in the exercise.

But even as Pattillo sweats every small detail, he doesn't lose sight of the big picture.

"You do get lost in the day to day," he said. "But I try to put my shoes back in the mid-'90s when I was a Signaleer, and what these guys are getting nowadays is like, wow, it's amazing."

Pattillo, who retired from the active Army as a master sergeant, deployed to Bosnia and Iraq. He used legacy radios, grease pencils, and paper maps.

"When I went in the Army, [which] was 1989, is like a millennium ago," he said. Today's Army "is like Star Wars, it's so much more advanced."

That poses a challenge for the next generation of Signal Soldiers who will have to master a stable of advanced digital systems, but it's a challenge that can be overcome through intense training and the leadership of warrant officers and senior enlisted personnel, he said. What also helps is young Soldiers' familiarity with the digital world.

"They're smart, and they're getting it," Pattillo said. "My son joins the Army in June, and he's coming in as a 25-B (Information Systems Operator-Analyst). I keep talking to him about what we're doing now to try to make sure he's ready."

As the Army uses the NIEs to dissolve the stovepipes that have long plagued digital systems in favor of common waveforms and an integrated network baseline, Pattillo sees great potential for his Signal successors to thrive. That's why he keeps up with the constant churn of systems and personnel to try to lay down NIE processes that will endure.

"We're discovery learning on some things, but we're leaps and bounds ahead of where we were last time, and we've already started getting ready for [NIE] 13.1 and 13.2," he said. "It's coming together, and I think what we're doing here is definitely worthwhile."

"YOU DO GET LOST IN THE DAY TO DAY. BUT I TRY TO PUT MY SHOES BACK IN THE MID-'90S WHEN I WAS A SIGNALEER, AND WHAT THESE GUYS ARE GETTING NOWADAYS IS LIKE, WOW, IT'S AMAZING."

COL GAIL WASHINGTON is Project Manager Current for ASAALT's System of Systems Integration Directorate. She holds a B.S.B.A. with a concentration in marketing from East Carolina University and an M.S. in information and resource management from Webster University. Washington is Level III certified in program management.

FOCUS ON THE INDUSTRIAL BASE

International sales hold promise as Army, DoD look at mitigating risks to industry from U.S. spending cuts

by Kris Osborn

The Army acquisition community is charting its strategy for the future with a mind to preserving key manufacturing capabilities and technical expertise in the industrial base, while also exploring international sales opportunities that could help sustain U.S. production efforts.

International sales of U.S. systems, through commercial channels or the government-to-government Foreign Military Sales (FMS) program, not only build and sustain international partners' capacity, but also bolster the health of the defense industrial base on which the Army depends, said Keith B. Webster, Deputy Assistant Secretary of the Army (DASA) for Defense Exports and Cooperation. Such sales can keep production lines open, sustain manufacturing facilities, and preserve specialized skills and needed technological expertise in the design and manufacturing workforce.

The Army is identifying critical program elements that may benefit from additional sales, to develop a tailored international strategy for support to the industrial base, Webster explained. "This includes working with our PEOs [program executive offices] to identify program areas that will have a need, and then identify known or potential international opportunities," he said.

This is just one of a series of ongoing analyses being conducted as part of a DoD-wide effort to offset or mitigate the potential negative impact of the constrained budgetary environment on the industrial base.

GAINS AND LOSSES

Anticipated future production of new, emerging programs for the Army, such as the Joint Light Tactical Vehicle, stands to fortify the defense industrial base by leveraging engineering skills and potentially bringing production to U.S. facilities. But other major programs, such as the Family of Medium Tactical Vehicles, are expected to transition from production to sustainment over the next several years, potentially challenging manufacturing capability and expertise.

The Office of the Secretary of Defense (OSD), with support from the military services, is undertaking a series of assessments of needs, gaps, capabilities, and production potential represented by key elements of the industrial sector. This Sector by Sector – Tier by Tier (S2T2) effort, begun in 2011, is designed to consider the health of the defense industrial base while managing the transition of some programs from new production to sustainment.

OSD is leading the S2T2 effort because so many major vendors conduct business with multiple U.S. services, said Wimpy D. Pybus, DASA for Acquisition Policy and Logistics.

"The idea is to reach out and identify challenges before they happen in order to see if anything can be done," Pybus explained. "What they've done thus far is completed the initial stages and surveyed suppliers to see if they can start to put a complete picture together and assess the ability of key parts of the industrial base to survive and stay in business."

AN AID TO EXCALIBUR

The Excalibur program is one for which international sales have helped sustain production. Here, Soldiers of the 1st Battalion, 37th Field Artillery Regiment prepare an Excalibur 155mm precision artillery round for the M-777 A2 weapon system at Fort Irwin, CA, Aug. 19, 2011. (U.S. Army photo by SPC Jennifer Grier.)

SUPPORTING TANK PRODUCTION
Foreign Military Sales (FMS) of the M1 Abrams tank have helped maintain production facilities and sustain U.S. tank manufacturing capability. Here, M1A1 Abrams tanks sit parked at a secured compound at the Besmaya Combat Training Center southeast of Baghdad, Iraq, Aug. 29, 2011. The Government of Iraq purchased of 140 M1A1 Abrams tanks through an FMS agreement with the United States. (Photo by SSG Edward Daileg, 305th Mobile Public Affairs Detachment.)

OVERARCHING EFFORT

The Under Secretary of Defense for Acquisition, Technology, and Logistics has made it a priority "to establish a process for systematically including industrial base issues in our budget deliberations," said Dr. Eugene Gholz, Senior Advisor to the Deputy Assistant Secretary of Defense for Manufacturing and Industrial Base Policy.

The S2T2 effort, which will create a data repository using various collection techniques including surveys, site visits, expert interchanges, and dialogue, is a step in that direction. It is designed to establish early warning indicators of risk in the commercial sector, promote policies to mitigate potential points of failure, reduce over-reliance on foreign sourcing, and identify areas of limited competition, Pybus and Gholz said.

"The idea is to avoid soda-straw studies that look at one particular thing for one particular purpose. The idea is to come to an enterprise level of understanding of all the connections in the industrial base," Gholz said.

"We want to be able to bridge particular niche capabilities that we are going to need that, right now, we are not buying," he said. "Different sectors of the industrial base are quite different in terms of their technological maturity, so you have to understand the industrial base sector by sector and then tier by tier."

Gholz described the S2T2 process as a series of ongoing assessments of manufacturing capacity and technical know-how to inform budget decisions and enable investments that will preserve strategically important technological priorities for the future. He said the surveys look at prime contractors, subcontractors, and secondary suppliers with a mind to their often complex, interwoven relationships and interactions. Sustaining the capacity to produce technologies and, in some cases, manufacture prototypes is a key part of this equation, he noted.

"Production capacity involves machines and factories and also involves worker skills, connections between production, designs, and an innovative capability to make the next generation of capability," Gholz explained. The first wave of S2T2 surveys was sent out last year, Gholz said.

"We have thousands of responses from facilities, primes, sub-tier suppliers, and all sectors of the industrial base. We are

organizing that first set of data, and we are preparing to send out another wave of surveys to further expand the data we have in the repository," he said.

IDENTIFYING OPPORTUNITIES

As DoD comes to a better understanding of what is required to sustain the industrial base, the Army is primed to provide leverage by identifying appropriate international sales opportunities.

U.S. FMS has grown 400 percent from 2003 to 2011. So far in 2012, FMS cases total more than $16 billion.

"We are in the process of assessing our programmatic challenges as we understand them," said Webster, explaining that PEOs have been asked to identify "where they believe we will need to leverage international activity to sustain critical capabilities."

Webster's staff is simultaneously analyzing capability gaps in partner militaries, so as to match potential buyers with the appropriate U.S. equipment and move toward a mutually beneficial sale—satisfying Army acquisition objectives, supporting U.S. strategic goals, and helping partners and allies meet their own security requirements.

CONCLUSION

In recent years, international sales have helped sustain production of a number of U.S. Army systems, including the AH-64 Apache attack helicopter, CH-47 Chinook helicopter, Patriot missile, Excalibur 155mm precision artillery shells, Guided Multiple Launch Rocket Systems, and Javelin anti-tank missile.

Foreign sales of Apache helicopters have kept production lines running during breaks in U.S. government buys, Webster explained, while driving down the per-unit cost and keeping future production and remanufacturing economically viable. Webster noted the importance of past Saudi investment in the M1 Abrams tank program to maintaining production facilities and sustaining U.S. tank manufacturing capability.

International sales of U.S.-developed programs can provide lift to the domestic defense industrial base, maintain production lines in the absence of U.S. Army orders, and create economies of scale to lower unit costs for continued U.S. buys. This will prove increasingly important to the Army acquisition community to maintain the critical technologies in a time of increased competition for scarce budget resources.

For more information on the DASA for Defense Exports and Cooperation, go to ***https://www.alt.army.mil/portal/page/portal/oasaalt/SAAL-ZN****; on U.S. FMS,* ***http://www.dsca.osd.mil/home/foreign_military_sales.htm****; and on DoD Manufacturing and Industrial Base Policy,* ***http://www.acq.osd.mil/mibp/index.shtml.***

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A BOOST FOR CHINOOKS

In recent years, international sales have helped sustain production of a number of U.S. Army systems, including the CH-47 Chinook helicopter. Here, a Chinook assigned to 3rd Battalion, 25th Aviation Regiment, 25th Combat Aviation Brigade (CAB) hovers while being hooked up to a container for a sling-load resupply mission at a remote outpost in Afghanistan, March 3. (Photo by SGT Daniel Schroeder, 25th CAB Public Affairs.)

CHEM DEMIL: MISSION ACCOMPLISHED

Army completes destruction of chemical weapon stockpiles, ahead of time and under budget

by Kris Osborn

HARNESSING CHEMISTRY TO DESTROY MUNITIONS
The last munition destroyed at the Johnston Atoll Chemical Agent Disposal System (JACADS) facility was a VX nerve agent-filled land mine. Mustard and VX agents are destroyed through a simple chemical reaction that breaks the bonds of the chemical agent, forming simpler organic compounds. (Photos courtesy of U.S. Army Chemical Materials Agency (CMA).)

The U.S. Army has completed the safe destruction of more than 24,000 liquid tons of mustard and nerve agent and disposed of more than 2 million individual items containing chemical agent, completing demilitarization at all Army-managed chemical demilitarization (chem demil) sites.

In total, the Army has managed the responsible elimination of roughly 90 percent of the Nation's overall chemical weapons arsenal; the remaining 10 percent will be eliminated by a DoD program, the U.S. Army Element Assembled Chemical Weapons Alternatives.

Leaders from the Army and the Office of the Secretary of Defense marked the occasion May 17 at Aberdeen Proving Ground (APG), MD, pointing out that the Army completed chem-demil destruction at all of its locations ahead of schedule, for $2.4 billion less than the program's anticipated baseline cost; Army leaders attribute being ahead of schedule to the skill and dedication of the chem-demil workforce. The Army now leaves communities surrounding the sites fully trained and equipped to handle any emergency, after working with them for years.

As part of the safety procedures, the Army has worked closely with Congress and the Federal Emergency Management Agency (FEMA) to provide training, emergency operations centers, and upgraded warning systems to the communities around the storage locations, said Carmen J. Spencer, Deputy Assistant Secretary of the Army for the Elimination of Chemical Weapons. The warning systems included sirens, radio alert mechanisms, and detailed evacuation routes.

"This is a significant achievement for the Army. It's a testament to our leadership, management, and workers, involving great collaboration among the government, contractors, and state and local officials," said Spencer. "It is a tremendous success story. Not only is the U.S. doing all it can to meet its international commitments, but more importantly the [U.S. Army] Chemical Materials Agency [CMA] is contributing to the national security of the United States in the process. These weapons in the wrong hands can do harm. They have safely and securely stored and destroyed them while providing maximum protection to the public and environment."

The U.S. arsenal, which at one point included 31,500 tons of chemical weapons such as mustard agents and the nerve agents Sarin and VX, is systematically being destroyed. The Army is involved in helping to destroy remaining stockpiles at Pueblo, CO, and Blue Grass, KY, sites managed under DoD auspices, using water oxidation and neutralization methods.

BEHIND THE SCENES

The Army began destroying agents at Johnston Atoll, a remote outpost in the Central Pacific 825 miles southwest of Hawaii, in 1990, in keeping with a 1969 order from President Richard Nixon to terminate production of U.S. offensive chemical weapons and the 1992 drafting of an international Chemical Weapons Convention (CWC), an arms control agreement calling for the destruction of chemical weapon stockpiles and a prohibition on their use and production.

In addition to the weapons stored on Johnston Atoll in the Pacific, chemical weapon stockpiles were dispersed among eight locations in CONUS, at Army facilities in Anniston, AL; Pine Bluff, AR; Tooele, UT; Umatilla, OR; Newport, IN; Aberdeen; Blue Grass; and Pueblo.

"The U.S. ratified the Chemical Weapons Convention, which mandates that nations destroy 100 percent of their weapons by

FIRST OF ITS KIND

In 1990, the Army began destroying agents at the JACADS facility, a remote outpost in the Central Pacific 825 miles southwest of Hawaii. JACADS, the Nation's first fully integrated facility designed specifically for the disposal of chemical weapons, safely completed the destruction mission in 2000.

FINAL CHAPTER
The last On-Site Container, shown behind the last Mustard Ton Container at the Tooele Chemical Agent Disposal Facility, UT, marks the completion of CMA's mission to destroy all chemical agent munitions.

April 29, 2012. The U.S. Army has met that goal," Spencer said. "The results of our efforts were presented to the Hague."

In their destruction, most of the chemical munitions are reverse-assembled using incinerators, automation, and state-of-the-art robotics, Spencer said. "Robotic systems disassemble the artillery rounds. The liquid agent is drained and then sent to holding tanks, where it is later placed in an incinerator reaching temperatures in excess of 1,000 degrees Fahrenheit," he explained. "Rockets, land mines, artillery shells, and steel casings are robotically sent to a metal parts furnace as well."

The areas where the incineration takes place are built for safety, with 22-inch-thick concrete walls.

Water and sodium hydroxide-based neutralization methods were used to destroy stockpiles at facilities at Aberdeen and Newport.

"We've reached the end of operations. The Army stockpile is gone. There are a lot of things behind this, such as the quality, commitment, and dedication of the workforce," said COL John Lemondes, Project Manager Chemical Stockpile Elimination at CMA.

A LEGACY OF SAFETY

Lemondes and Spencer emphasized that safety was a huge part of the equation throughout the many years of Army chem-demil efforts; in fact, the Army achieved a "0.28" monthly recordable injury rate (RIR), a number indicating the effectiveness of Army safety procedures. Any RIR less than 1 is considered to represent world-class safety, Lemondes said.

"We did this through continuous process, as part of the culture. We're very safety-conscious. We do root-cause analysis on everything that may have gone wrong. This has involved constant leadership efforts to make sure every aspect of safety was applied," he added.

"One of the lasting legacies of the program is that each community where we destroyed chemical weapons is now a preeminent community fully trained and equipped to respond to any emergency, whether it be an environmental disaster or terrorist event," Spencer said. "That is because the U.S. Army is working closely with FEMA and has directly provided over $1 billion to those communities in order for them to be the best trained in the country.

"That is a legacy," he said. "We've worked to ensure that each community understands the potential dangers and, more importantly, is trained on how to respond. Fortunately, we've never had a real-world incident that required any off-post reaction."

The Army is now beginning the process of effectively transitioning its workers and closing the facilities in an environmentally safe manner. In some cases, communities may retain buildings, laboratories, or facilities; by law, the Army has to dismantle each of the facilities unless there is a separate agreement between the state government and the Secretary of the Army.

While each state may have different standards and approach the issue of closing differently, it generally takes about two years to close down a facility, Lemondes said.

"The transition can be difficult, because the priority is the people who have done this work. Many of these people have dedicated their professional lives to this," he added.

THE WORKERS

In fact, many workers involved for decades in the effort attended APG's May 17 ceremony to reflect upon their efforts and commemorate this important Army milestone.

"It took hundreds, if not thousands, of people to make this happen every day. My kids tell me, 'You're making a difference.' Everyone worked together and did their part," said Amy Dean, a 14-year veteran of CMA as an Environmental Engineer

and Program Manager for chemical stockpile elimination.

Dean is now working on closing the facilities and helping workers transition, in some cases, to new employment.

Bert Durrant, who has been a chem-demil worker since 1979, spent years wearing the protective gear needed to safely destroy chemical agents and munitions.

"I was involved in research and development. Every day was a new experience with different hurdles, but people put their lives in each others' hands. It is very fulfilling that we did this in such a safe manner, with so few problems," said Durrant, a longtime CMA Engineering Technician.

Durrant, who helped develop some of the procedures and regulations involved in safe destruction of chemical agents, said that prioritizing safety and managing costs were always key parts of the calculus.

"We had to research how to do this. When this started out, we didn't have a lot of regulators," he explained. Overall, workers attending the ceremony expressed pride in the chem-demil mission.

"I have an incredible sense of pride working on this program. I stumbled into this job after college and have been working on this program ever since. I can't imagine a program that has any more importance to the safety of our world. That really resonates with me," said Rob Malone, an Environmental Scientist and Site Manager at the Tooele Chemical Agent Disposal Facility.

As a scientist, Malone explained the value of the neutralization methods used at the Aberdeen and Newport facilities. "Mustard and VX agents lent themselves to a simple chemical reaction that broke the bonds of the chemical agent, forming simpler organic compounds," he said. The "neutralized" or demilitarized waste materials, once free of dangerous chemicals, were disposed of through standard commercial procedures, he added.

HISTORICAL HIGHLIGHTS

Some of the U.S. chemical weapons stockpile dates to the World War I era.

"The Germans used blister agent and chlorine gas in World War I," said Carmen J. Spencer, Deputy Assistant Secretary of the Army for Elimination of Chemical Weapons. "Also, prior to World War II, the U.S. was aware that Germany was developing an offensive chemical weapons program. Our strategy was always to compile chemical weapons as a deterrent," he said.

Much attention was paid to chemical weapon stockpiles and production after World War II, with the emergence of the Cold War era. The Russians have destroyed 62.5 percent of their chemical weapons stockpile thus far, Spencer said.

"Post-World War II, the Russians got to Berlin and found a large cache of liquid nerve gas. The U.S. took some to analyze, in order to ensure that all of our protective clothing and protective masks would protect U.S. Forces from those nerve agents," Spencer explained. "Also, we knew that in the Cold War Russia was improving upon their chemical weapons and building a vast arsenal of both nerve and blister agents. The U.S. program was basically a Cold War relic."

—KRIS OSBORN

Malone, who served as the lead environmental scientist at the Johnston Atoll site 18 years ago, is also familiar with the more standard "reverse assembly" process of demilitarization. "We used robotics to, essentially, take apart the munitions. Energetics went into one furnace, liquid agents went into a second furnace, and then the metal bodies themselves went into a metal parts furnace," he said.

Malone said site closure and demilitarization procedures have been refined and improved over the years. "We have continually refined our processes. Our facilities are technically hazardous waste treatment facilities, so there is a constant interaction with the state regulatory committee to build consensus regarding the best methodologies for basically handling the material we are tasked to dispose of. We learned to do it better and faster," he said.

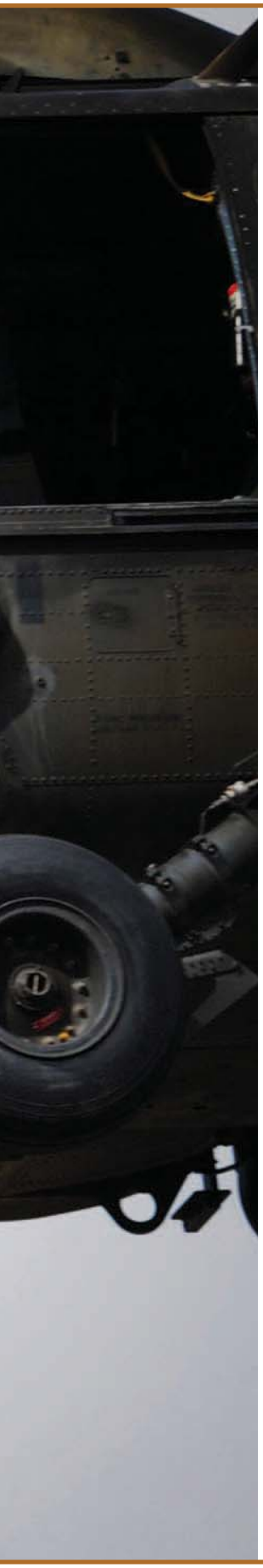
CONCLUSION

Army leaders involved in the effort consistently praise the dedication and resolve of the workforce.

"We finished four and a half years early. An overwhelming majority of the workers were contract employees, and we could not have done it without them. This is a tremendous accomplishment by the individual workers," Spencer said.

For more information, go to ***http://www.cma.army.mil/.***

KRIS OSBORN is a Highly Qualified Expert for the Assistant Secretary of the Army for Acquisition, Logistics, and Technology Office of Strategic Communications. He holds a B.A. in English and political science from Kenyon College and an M.A. in comparative literature from Columbia University.



MISSION: MEDEVAC RECAP

USAMRMC, PEO Aviation collaborate to upgrade Black Hawks with lifesaving capabilities

by Charles Paschal

The bulk of the Army's medical evacuation (MEDEVAC) missions are carried out by a dependable fleet of older-model helicopters. These older models, from the 1980s and 1990s, are being reconstructed and put back into service. The upgraded helicopters, referred to as "Recap Black Hawks," support most military missions while the newer models are being developed and introduced to the field.

The U.S. Army Medical Research and Materiel Command (USAMRMC) and the Project Manager Utility Helicopters (PM UH) in Program Executive Office (PEO) Aviation recently have collaborated to develop and release the Recap Black Hawks into the field. Within USAMRMC, the Project Management Office MEDEVAC of the U.S. Army Medical Materiel Agency (USAMMA), dedicated to managing the mission equipment package for MEDEVAC, is working directly with PM UH to provide medical and logistical expertise.

The Project Management Office (PMO) MEDEVAC, formed in 2010, has the mission to modernize the Army's fleet of UH-60A/L Black Hawk helicopters. Currently, PMO MEDEVAC has the goal to refurbish more than 335 Black Hawk helicopters by 2020.

The amount of work that must be done on these helicopters to prepare them for redeployment is a challenging and time-sensitive task, for which a great deal of coordination in required.

Later this year, the first modernized Recap MEDEVAC Black Hawks will be deployed to theater to support the combatant commanders.

CHALLENGING RESCUE
SGT Daniel Buzard reaches out to steady himself against SPC Mark Jordan during MEDEVAC hoist training May 9 on Forward Operating Base Salerno, Khost province, Afghanistan. MEDEVAC crews face extraordinary terrain challenges in mountainous eastern Afghanistan. Hoist operations are often the only way to rescue injured Soldiers. Older MEDEVAC Black Hawks use an internally mounted rescue hoist, which takes up a large portion of the medical treatment area in the helicopter, but the Black Hawks are being upgraded with an externally mounted hoist. (Photo by SSG Donna Davis, Task Force 82nd Combat Aviation Brigade Public Affairs.)

MEDEVAC WORKHORSE

"Recap Black Hawks" support most military missions while the newer models are being developed and introduced to the field. The Project Management Office MEDEVAC of the U.S. Army Medical Materiel Agency, part of the U.S. Army Medical Research and Materiel Command (USAMRMC), has the mission to refurbish more than 335 Black Hawk helicopters by 2020. USAMRMC and Program Executive Office Aviation's Project Manager Utility Helicopters have collaborated on the recapitalization program. Here, a UH-60 Black Hawk MEDEVAC helicopter with C Company, 1st Battalion, 169th Aviation Regiment, New Mexico National Guard, attached to the 25th Combat Aviation Brigade (CAB), performs a dust landing during a training flight on Camp Dwyer, Helmand province, Afghanistan, April 4. (Photo by SGT Daniel Schroeder, 25th CAB Public Affairs.)

SHARED RESPONSIBILITY

These refurbished Black Hawks transition to PEO Aviation's Product Director (PD) MEDEVAC for installation of mission equipment that will make them MEDEVAC-specific.

USAMRMC maintains responsibility for much of the equipment that goes on the refurbished Black Hawks. USAMMA's MEDEVAC Mission Equipment Package project encompasses the litter lift system, medical mission sensor, oxygen production, and other items. In the future, all MEDEVAC aircraft will fly with a transport telemedicine system pioneered by USAMRMC. The installation of these and other subsystems is coordinated through PD MEDEVAC.

Complementing PD MEDEVAC's aviation expertise, USAMRMC provides the medical expertise for five main medical subsystems.

CRITICAL CAPABILITIES

While some of the changes to the Recap Black Hawks will be minor, such as the modification of a window or the addition of an infrared device, they will add capability and help medics save lives on the battlefield.

The five subsystems being added to the aircraft are:

- The Forward Looking Infrared sensor, used to locate injured Soldiers on the ground and help crew members scan the landing zone to ensure that it is safe.
- The Interim MEDEVAC Mission Support System, with three components:
  - The Updated Patient Handling System, whereby litters are loaded onto shelves mounted on the outside bulkheads of the helicopter; the shelves move up and down to allow for easier loading. The original system, by contrast, was a carousel on a rotating bulkhead in the middle of the helicopter.
  - The Smart Window, a sliding window that replaces the original bubble window on the cargo door. This new version allows the medic to look out of the aircraft to perform takeoff and landing functions more easily while wearing equipment.
  - The Internal Communication System Relocation Kit, which moves the helicopter's internal communication system and its components to the rear of the helicopter, allowing the medic to move more easily throughout the cabin while treating patients.
- The Advanced Medical Oxygen Generating System (AMOGS), beneath the engine compartment, which converts high-pressure air generated by the helicopter's jet engine into medical-grade oxygen. The AMOGS system replaces the traditional medical cylinders of the past, which have posed a potential hazard because they were likely to explode if struck by gunfire. If the newer AMOGS is struck, it simply stops functioning.
- The Environmental Control System, which provides heating in the cabin of the helicopter to help reduce the chance of hypothermia in vulnerable patients.
- The Telemedicine System, which will be the medic's line of communication with ground-based health care providers. Two-way communication allows medics to consult with doctors and obtain prior approval to provide certain treatments, as well as to track a patient's treatment history before arrival at a field hospital.

LOGISTICAL CHALLENGES

PD MEDEVAC encountered a fielding challenge with one of the subsystems, the externally mounted rescue hoist. This critical piece of equipment allows the MEDEVAC crew to lower a flight medic to rescue a Soldier in extreme terrain that prohibits landing the aircraft.

Older MEDEVAC Black Hawks use an internally mounted rescue hoist, which takes up a large portion of the medical treatment area in the helicopter. Both the older internal hoist and the newer external hoist systems require a specific installation kit, called an "A" kit, that modifies the helicopter to receive the specific hoist. The amount of intrusion into the helicopter framework depends upon which "A" kit is used. The corresponding internal or external "B" kit is the actual machinery of the hoist.

Ideally, the number of external hoist "A" kits would match the number of helicopters being converted. Unforeseen circumstances created a production mismatch with fielding schedules, however; there were not enough external hoist subsystems. The legacy internal hoist "B" kits were available, but the corresponding internal hoist "A" kits were not. If this issue were not addressed, some of the helicopters would lack the ability to participate in missions requiring the use of a hoist, a piece of equipment that the medics simply could not forgo.

PD MEDEVAC requested USAMRMC's assistance in obtaining the additional internal hoist "A" kits. Our command was able to provide personnel with expertise and additional resources to assist with the additional equipment, which allowed for the continued fielding of the MEDEVAC aircraft.

When production of the externally mounted hoists did not match fielding, it became apparent that an alternate plan would be necessary to maintain the project timeline. The two teams developed a plan that was not only achievable but also a logical use of available components, identifying and resolving the issue quickly with minimal disruption in service or schedule. The resolution of this issue would not have been possible if not for the teams' close communication and cooperation. In the end, their backup plan had a major impact on lifesaving missions on the battlefield.

For more information on the MEDEVAC Recapitalization Project, go to ***http://www.usamma.army.mil/PM_MEDEVAC.cfm;*** *and* ***https://mrmc.amedd.army.mil/index.cfm?pageid=media_resources.articles.army_recapitalizes_military_aircraft_for_current_missions.***

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LOGISTICS *in* ASYMMETRICAL CONFLICTS

An Israeli Soldier and his colleagues examine several contemporary operations

by Eyal Ziv

In conducting the studies that resulted in our book *Logistics in Asymmetrical Conflict*, my co-authors, Drs. Haim Shnaiderman and Hanan Tell, and I found that while asymmetrical conflicts are more common than conventional warfare, little research had been conducted about logistics in asymmetrical confrontations.

In fact, even Israel, which has not really been at peace since its establishment 64 years ago, fought its last conventional war more than 30 years ago. Since then, the Israel Defense Forces (IDF) have fought battles against insurgents and terrorist organizations in Lebanon, the West Bank, and the Gaza Strip.

NATIONAL PERSPECTIVES

My colleagues and I looked at low-intensity conflicts (LICs), asymmetrical contingencies, and the conduct of civil and military logistics. We looked at LICs from the American, Soviet, and Israeli perspectives. We found that each country adopted its own definition in light of its specific political and geographic situation.

The American perspective sees LIC as a spectrum of ways to conduct warfare that is below conventional war, including peacekeeping and humanitarian missions and counterinsurgency missions on a global scale. The Israeli perspective is quite similar to the American, but it emphasizes LIC as a way to combat terrorism and insurgency along its own borders. The Soviet Union saw LIC from the opposite perspective, as a way to attack mainly Western forces, using insurgents as proxies. This perspective changed when the Russian Federation—the successor to the Soviet Union—had to counter Chechen insurgents.

PRINCIPLES AND CASE STUDIES

We concluded that, in most cases, nine common principles determine logistics success: simplicity, flexibility, feasibility and attainability, economy, information, dispersion,

AERIAL LOGISTICS

Because most low-intensity conflicts (LICs) occur in areas where the threat to aircraft is low, aerial platforms are used for logistics functions. Here, supplies are taken off a vehicle to begin loading a UH-60 A+ Black Hawk helicopter Feb. 22. The Soldiers are part of a U.S. task force to provide humanitarian assistance at the request of the government of Montenegro in response to heavy snowfall. (Photo by SGT Edwin Bridges.)

DISTRIBUTING DRINKING WATER
Previous LICs have shown that logistics forces face problems in distributing water, particularly because the available water has to be purified. Here, locals from the village of Banbalay in Kandahar, Afghanistan, test the new water filtration system presented to them by Soldiers of the 1st Battalion, 5th Infantry Regiment and the 25th Brigade Support Battalion, 1st Stryker Brigade Combat Team, 25th Infantry Division (1/25) in August 2011. (Photo by 1/25 Public Affairs.)

continuity and coordination, timeliness, and responsibility.

We then analyzed logistics in asymmetrical warfare through case studies of the Soviets in Afghanistan and the Russians in Chechnya; the U.S.-led coalitions in Somalia and *Operation Iraqi Freedom*, using the American perspective; and North Atlantic Treaty Organization (NATO) forces in Bosnia-Herzegovina and Kosovo.

We also studied how the IDF sustained its asymmetrical contingencies in the West Bank, during Israeli control of its self-declared security zone in Lebanon (until 2000), during Israeli control in the Gaza Strip (until 2005), and during the last war in Lebanon against Hezbollah (in 2006).

OBSERVATIONS ON LIC LOGISTICS

We noticed a few differences among the conflicts. The Soviets, the Russians, and the Israelis handled conflicts within their territories or in territories along their borders, while the Americans and NATO forces led coalitions far from their homelands in conflicts supported by host nations.

Most of the conflicts were operations against insurgents and terrorist organizations. In fact, the only conflict against a sovereign nation was NATO's operation in Kosovo; this model was repeated recently during the conflict in Libya. Most asymmetrical conflicts were nonlinear and did not feature any real front lines. Logistics forces were typically caught in the line of fire and sometimes were targeted by the enemy. In some situations, the civilian population also received humanitarian support from military logistics forces; this strategy was aimed at easing pressure on the combat forces that dealt with insurgents by earning the locals' trust.

The militaries had to adopt new concepts and tactics and use unconventional logistics tools. In most cases, the logistics forces had to adapt and improvise solutions.

For instance, water supply was often a problem. The water available in Iraq, Afghanistan, and Somalia had to be purified and distributed by means other than water tankers. In urban fighting in Iraq,

Chechnya, the West Bank, and Gaza, enemy fire and close-range fighting made water distribution difficult. In most cases, the immediate solution was to provide water in small bottles.

While examining maintenance efforts, we found that in most cases, regular and preventive maintenance procedures were insufficient and equipment broke down frequently. Most militaries adopted tailored maintenance procedures, like special squads of mechanics in Afghanistan and Bosnia, or allocated equipment for local use only, or adapted new mean times to repair-based procedures.

In most conflicts, the method of medical evacuation was changed dramatically. The conventional MEDEVAC procedures simply did not fit the situation in the field. Most conflicts required widespread and close-to-combat medic coverage because of the dispersion of combat forces, usually within urban areas. Dispersed medics and forward surgical troops within the combat units had to reach injured personnel as fast as they could and perform fast land and air evacuations straight to hospitals—a procedure called "scoop and run."

Tactical transportation and distribution was a problem in most cases because of the nature of the conflicts, with enemy personnel surrounding bases and routes and disguising themselves as civilians. In some cases, transportation platforms were lacking. To address those issues, militaries used armored vehicles to supply combat forces and relied heavily on local subcontractors to perform ad hoc missions.

COMMON CHARACTERISTICS

We identified 13 LIC issues that affect the nine common logistics principles:

- **Reduction of buffers**—During conventional warfare, the logistics formations differ at the strategic, operational, and tactical levels; each level has its own clear responsibilities. However, the logistics formations in asymmetrical conflicts became more modular and very much tailor-made. As a result, logistics buffers between levels are usually reduced.
- **Continuous learning**—Unlike conventional conflicts, most asymmetrical conflicts take years to end. It took three weeks to crush the Iraqi army in 2003, but the ensuing operations in Iraq continued for eight years. Because of the longevity of asymmetrical conflicts, there is time to learn lessons (which insurgents do as well) and adopt new tactics regularly.
- **Spectrum of logistics solutions**—The changing intensity of LICs requires militaries to use a wide range of supply, medical, maintenance, and transportation solutions to sustain combat forces. This flexibility is needed at all times.
- **"Just in case" philosophy**—Unlike conventional conflicts, in which resources are scarce and are managed to meet urgent needs, LICs are likely to require many more resources, such as provisions, equipment, and medics, to meet the demands of unforeseen missions that arise from LICs and the need to have those resources nearby.
- **Logistics in hostile environments**—In conventional conflicts, logistics troops usually operate one step behind the combat forces. During LICs, logistics forces often operate in a hostile environment and need to protect themselves from enemy attacks.
- **Detailed data management**—The mass of forces and operations in conventional conflicts does not allow logistics commanders to control their resources in detail. During LICs, logistics commanders need to, and can, manage their operations with greater precision. Commanders in LICs tend to manage their supply levels in absolute numbers as opposed to required percentages, as is common in conventional wars; have specific data on casualties; and know the exact location of each convoy.
- **Small headquarters**—Deployment of combat forces often takes priority over deployment of logistics forces. As a result, in some LICs, small logistics headquarters are deployed quickly to provide urgently needed support. Therefore, in some cases, logistics headquarters have a short time for buildup and begin operations with a shortage of personnel. Personnel often are provided largely by reserve forces.
- **High tempo**—The tempo of operations in LICs usually does not tolerate

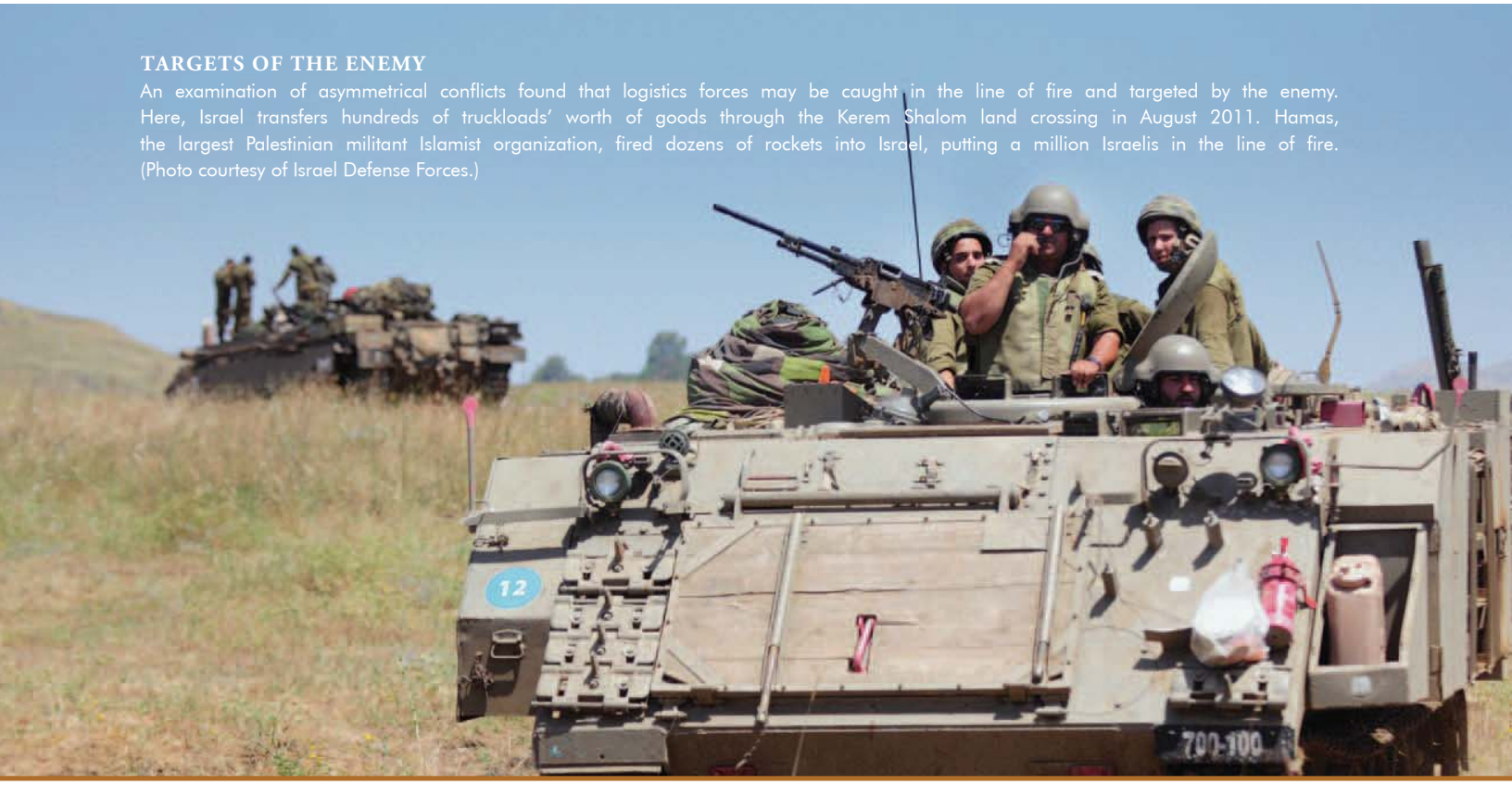
MOST ASYMMETRICAL CONFLICTS WERE NONLINEAR AND DID NOT FEATURE ANY REAL FRONT LINES. LOGISTICS FORCES WERE TYPICALLY CAUGHT IN THE LINE OF FIRE AND SOMETIMES WERE TARGETED BY THE ENEMY.

the conventional logistics tempo common during war. Medical evacuations are faster, supplies for combat troops need to be provided constantly, and equipment breakdowns are less tolerated by commanders. Therefore, logistics commanders need to provide fast solutions and be able to sustain forces in every situation.

- **Humanitarian aid**—In some of the LICs we studied, humanitarian aid was the priority mission, and logistics played a major role in providing that aid. An example is *Operation Provide Relief* in Somalia. During LICs that were not oriented toward humanitarian aid, providing supplies and medical treatment to civilians eased the pressure for logistics support from combat troops and local political leaders by preventing humanitarian catastrophes.
- **Use of permanent infrastructure**—LICs are usually static and enable deployed forces to use local infrastructure.
- **Use of aerial logistics**—Most LICs are executed in an environment in which threats to aircraft are relatively low and there usually is no shortage of aerial platforms for logistics functions such as supply and medical evacuations. Therefore, logistics can be much more flexible by using helicopters and airplanes to support operations and bypass enemies threatening logistics routes on the ground.
- **Outsourcing**—Outsourcing is an old technique used to sustain armies in foreign territory. History records countless examples of outsourcing food supply, transportation, and barracks for troops. Modern war has neglected the use of outsourcing somewhat because of the speed of modern combat, which relies on military convoys and military logistics solutions. The static nature of LICs and their duration have made outsourcing a useful and economic way to sustain troops.
- **Extensive reliance on information technology** — Reliance on information technology and other new technologies is not characteristic of conventional warfare. However, the high demand for accurate, online information for decision makers has made information technology platforms important for logistics in LICs. The United States has used newly adopted technologies, such as radio frequency identification and total asset visibility systems, as strategic enablers. The IDF is adopting the new Tzayad Digital Army Program as a main platform to transfer data from the field to headquarters.

IMPACT ON PRINCIPLES OF LOGISTICS

When we examined how the 13



TARGETS OF THE ENEMY

An examination of asymmetrical conflicts found that logistics forces may be caught in the line of fire and targeted by the enemy. Here, Israel transfers hundreds of truckloads' worth of goods through the Kerem Shalom land crossing in August 2011. Hamas, the largest Palestinian militant Islamist organization, fired dozens of rockets into Israel, putting a million Israelis in the line of fire. (Photo courtesy of Israel Defense Forces.)

characteristics we identified affect the nine common logistics principles, we found that some of the principles fit the nature of LIC logistics and others do not. We also suggested two new principles that should be adopted by militaries engaged in LICs: survivability and dynamic endurance. The principles are:

- **Simplicity**—Simplicity emphasizes finding simple solutions in difficult situations. We found that because of the differences in military situations, sometimes within the same region, and the high tempo and broad spectrum of contingencies, simplicity is hard to achieve in LIC logistics. In fact, it can be the exact opposite of what is needed on the ground when complex solutions are required. Therefore, simplicity does not apply to LIC logistics.
- **Flexibility**—Flexibility is one of the bases of the ability to sustain troops during LICs.
- **Feasibility and attainability**—LICs are relatively long operations that require high levels of resources. So it is important that they be based on feasible and attainable objectives.
- **Economy**—The nature of LICs contradicts the economy principle. Commanders prefer to have as many resources as they can, even in excess of actual needs, just to be on the safe side.
- **Information**—Since one of the characteristics of logistics in LICs is the need to accurately and quickly process data online, information is a key principle of LIC logistics success.
- **Dispersion**—Although combat troops in LICs disperse, their sustainment is mainly centralized. Unlike in conventional conflicts, in which combat troops at the battalion and brigade levels are mainly self-reliant, the logistics solutions during LICs are usually provided by the central and regional levels. The only cases we found in which dispersion of logistics forces was implemented was during deployment of medical troops. Therefore, we conclude that, for the most part, dispersion is not a principle of logistics in LICs.
- **Continuity and coordination**—Although continuity and coordination in LICs are relatively hard to achieve, we found that this principle is important and supports sustainment efforts.
- **Timeliness**—Timeliness is critical to success during LICs. The tempo of the conflicts and the importance of tactical missions that sometimes affect strategic decisions make it an important principle.
- **Responsibility**—This principle calls for defining the level of responsibility of each headquarters and commander in each stage of an operation. It sometimes requires defining the responsibilities of each country to sustain forces in coalition operations. During international operations such as NATO operations, the principle of responsibility reflects the need to define the role of each participating country.
- **Survivability**—The principle of survivability was adopted by a few armies, but it is not very common. We found that it is critical for logistics troops to develop survivable platforms and procedures in order to sustain combat troops.
- **Dynamic endurance**—Endurance is the ability to withstand hardship or adversity. We defined dynamic endurance as a principle that emphasizes the need to sustain forces during contingencies throughout a conflict until its end, even if it takes years.

CONCLUSION

In the last chapter of our book, we looked at the history of how military revolutions appeared and at current and future trends in warfare. Modern theories like the revolution in military affairs, the fourth generation of war, and others suggest that asymmetrical warfare will dominate future confrontations and replace traditional linear battles.

As a consequence of this trend in warfare, we expect logistics to evolve into three operational levels. Frontline logistics will be divided into two sublevels:

- Logistics platforms and resources placed with combat units that will enable greater self-reliance than those forces have today.
- A dynamic logistics network composed of modular logistics units that will be able to sustain all types of combat troops within their areas of responsibility. This line of thinking, which is similar to a cellular phone network, has started to develop during LICs, especially in the IDF.

The third operational level is strategic logistics based in both the homeland and the host nation, supporting the theater with those resources and stretching strategic resources toward the meeting point with the frontline logistics troops.

This article is a condensed version of Ziv's article in the January-February 2012 edition of Army Sustainment **(*http://www.almc.army.mil/alog/index.html*)**. *It is reprinted with permission.*

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FLEXIBLE COMMUNICATIONS

Fabrication of displays on plastic will allow future Soldiers to have electronics everywhere

by Dr. Eric W. Forsythe

At the dawn of the 21st century, U.S. Army researchers saw potential in flexible displays, but nothing was showing up in the marketplace.

In 2004, the Army decided to change that, and partnered with industry and academia to create the Flexible Display Center at Arizona State University (ASU). The Army's goal was to get this amazing technology into the hands of Soldiers.

"We were starting to develop a lot of new kinds of electronic gizmos to help Soldiers," said Nick Colaneri, Center Director. "The problem was, they all needed displays. Flat displays today are made out of glass. Glass is heavy, and it breaks. So, we're all about getting the glass out of displays."

Fast forward eight years. Teams of researchers have scored significant breakthroughs and racked up more than 50 patents. The original goal of the program may soon be met. "The most important advance is that we figured out how to put conventional electronics onto plastic using existing electronics manufacturing equipment," Colaneri said.

This manufacturing breakthrough opened a world of possibilities.

With this process, plastic can be glued onto a carrier in a standard manufacturing fabrication facility and then de-bonded—kind of like a Post-it note. Literally the plastic peels off from the carrier. This allows the Army to leverage traditional manufacturing paradigms for flexible displays, which then reduces overall entry costs for displays while providing the capability to fabricate electronics on plastic. That is key for large-scale manufacturing of displays.

FIRST DELIVERABLE: WRIST-BORNE DISPLAY

"We're going to unburden Soldiers by getting rid of a lot of the batteries that have to be carried today," Colaneri said. "The nearest-term

MEDICAL APPLICATIONS

SFC Timothy Alexander, Operations NCO in Charge, National Capital Region Information Operations Center, U.S. Army Reserve, looks at a prototype of a ruggedized flexible display packaged in a medical bag. Possible uses of this technology for a field medic would be to keep a database of unit members' medical histories or first-aid treatment records. (Photo by Doug LaFon, U.S. Army Research Laboratory.)

application we've been talking about is a display on the Soldier's sleeve."

Imagine what a Soldier could learn by glancing down at his or her sleeve, such as current mission requirements or any battlefield command. That's what Army researchers are thinking about for the Soldier of the future.

"The Soldier is going to have a display that is essentially embedded on his or her uniform that will provide information when it is needed," said Dr. David Morton, Program Manager for flexible displays at the U.S. Army Research Laboratory (ARL). "The system will determine what information is needed so as not to overload the Soldier with additional information. If a Soldier needs friend-or-foe information or instructions on what to do, it will be provided instantly." Morton said the Soldier of the future will have more reliable technology.

"The display that's on the Soldier will not break," he said. "It will use very low power, and it's not going to wear out. More important, from a systems standpoint, it's made in a commercial environment. It didn't cost too much to insert, which means we can give it to all Soldiers."

"It's all about getting networked information down to the individual Soldier," Colaneri said. "Today you may have a squad leader with access to the network, any of the information that's coming from the headquarters, or the network of sensors around the battlespace. But the individual Soldier relies on hand signals or shouts in terms of communication. This will give a great deal of situational awareness, just simple stuff: 'Where am I? Where are the bad guys? Which way is out? What other assets are available to help out in critical situations?' "

PLASTIC + CIRCUITRY = FLEXIBLE DISPLAY
To form a display, the e-ink is printed onto a sheet of plastic, which is laminated to control circuitry. All this is done with traditional manufacturing methods, which reduces overall entry costs. (U.S. Army photo by Conrad Johnson.)

PARTNERS IN INDUSTRY AND ACADEMIA

For the first few years funding for the center came from the ARL. Industry partners are heavily invested, too. The Flexible Display Center in Tempe, AZ, has more than 40 engineers and technicians. They collaborate with several professors at ASU, Princeton University, and the University of Texas at Dallas. Many graduate students are also involved in the project.

"Most important, we have 30 dues-paying industrial companies who have teams of researchers working together with us on various projects, whether it's developing new materials, new manufacturing equipment for making the parts, or making the displays. Once we've worked all the bugs out and figured out how it's going to get made, we are eventually going to get it into the hands of the Soldiers," Colaneri said.

OTHER APPLICATIONS

This won't be the Army's only use of this technology. Morton said military vehicles of the future will have plastic displays.

"They will be essentially a sheet of plastic that is, with the electronics, 1/16th of an inch thick and will weigh almost nothing," Morton said. "When a vehicle is in combat and happens to get hit, you won't have to worry about things flying off and killing people."

A significant portion of the volume and weight inside a military vehicle is attributable to features that make them rugged. A 10-pound monitor may need 10 pounds

of metal to bolt it down. However, a sheet of plastic attached with Velcro poses a much lighter, minimal risk.

Years of research in this area has opened the Army's eyes to many potential applications for flexible electronics on plastic. "It turns out there are actually more Army-relevant applications for flexible electronics than flexible displays," Morton said.

Morton and the team work closely with the Defense Threat Reduction Agency, which supports Army Explosive Ordnance Disposal (EOD). Imagine an EOD Soldier in the field with a lightweight, flexible X-ray sensor. That's just one of many potential uses for flexible electronics on plastic.

"We're going to be able to apply electronics everywhere," Morton said. "Think of plastic patches on the outside of tanks that are sensors. The Soldier may have sensors on his or her back, built onto the uniform for friend-or-foe identification. There will be sensors built into the helmet—maybe acoustic, could be optical. The communications antenna may be built into the clothing. If you can put electronics on lightweight, flexible plastic or build it into the fabric, essentially you can put it everywhere."

SOLDIER OF THE FUTURE
Years of research has opened the Army's eyes to many potential applications for flexible electronics on plastic, making it possible to give Soldiers information in ways that are not possible now. (U.S. Army photo by Conrad Johnson.)

CONCLUSION

Morton constantly updates Army planners on the progress of research.

"We're driving the technology forward. We know what's coming, and we have an estimate of when it's going to arrive," Morton said. "We're not only driving technology, we're providing critical inputs for the development of our requirements road maps. We're driving the customers by saying, 'This is what you can plan for and insert.' "

"You see it all around you, most visibly in the multi-touch phones," Colaneri said. "It's being enabled by a whole host of electronic technologies. In the units you're using, the display is still a piece of glass. It's small, flat, hard, and rigid. As we move toward the displays that can be unfolded or unwrapped or can be anywhere, on your sleeve or pants leg, I think we're going to see an evolution to information everywhere … connectivity between electronic systems that are throughout our lives, ultimately empowering and unburdening us in our daily lives as consumers."

The team is also optimistic about the Army's flexible display and electronics research program. Because of the partnership, industry may bring flexible displays to the marketplace in the next few years.

It is a success story both in terms of how research can be done in certain applications, and certainly in terms of accelerating technology for the Soldier. Ultimately that is our goal—to get technology to benefit the Soldier.

For more information, go to ***http://flexdisplay.asu.edu/****.*

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A MEASURED SOLUTION

Adapting and quantifying COTS technologies to protect Soldiers during HMMWV rollover accidents

by Michael L. Sharp

INTEGRATION MODEL

The Product Manager Light Tactical Vehicles chose the M1151A1 High Mobility Multipurpose Wheeled Vehicle (HMMWV) four-passenger variant for integration, as it was the most common variant in production at the time. (U.S. Army photo.)

As with any truck, High Mobility Multipurpose Wheeled Vehicle (HMMWV) rollovers can occur as a result of an evasive steering maneuver while driving on a road or trying to stabilize the vehicle on a hill or at the edge of a ditch. Rollover events can result in severe or fatal injuries, in some instances complete ejection from the vehicle.

Statistics from the U.S. Army Combat Readiness/Safety Center show that occupants who wear seat belt restraints properly are more likely to survive a rollover, suffering less severe injuries while remaining inside the vehicle. Among the options for safety measures to mitigate rollover injuries, one commercial-off-the-shelf (COTS) technology identified was a system of side-curtain air bags and five-point intelligent seat belts.

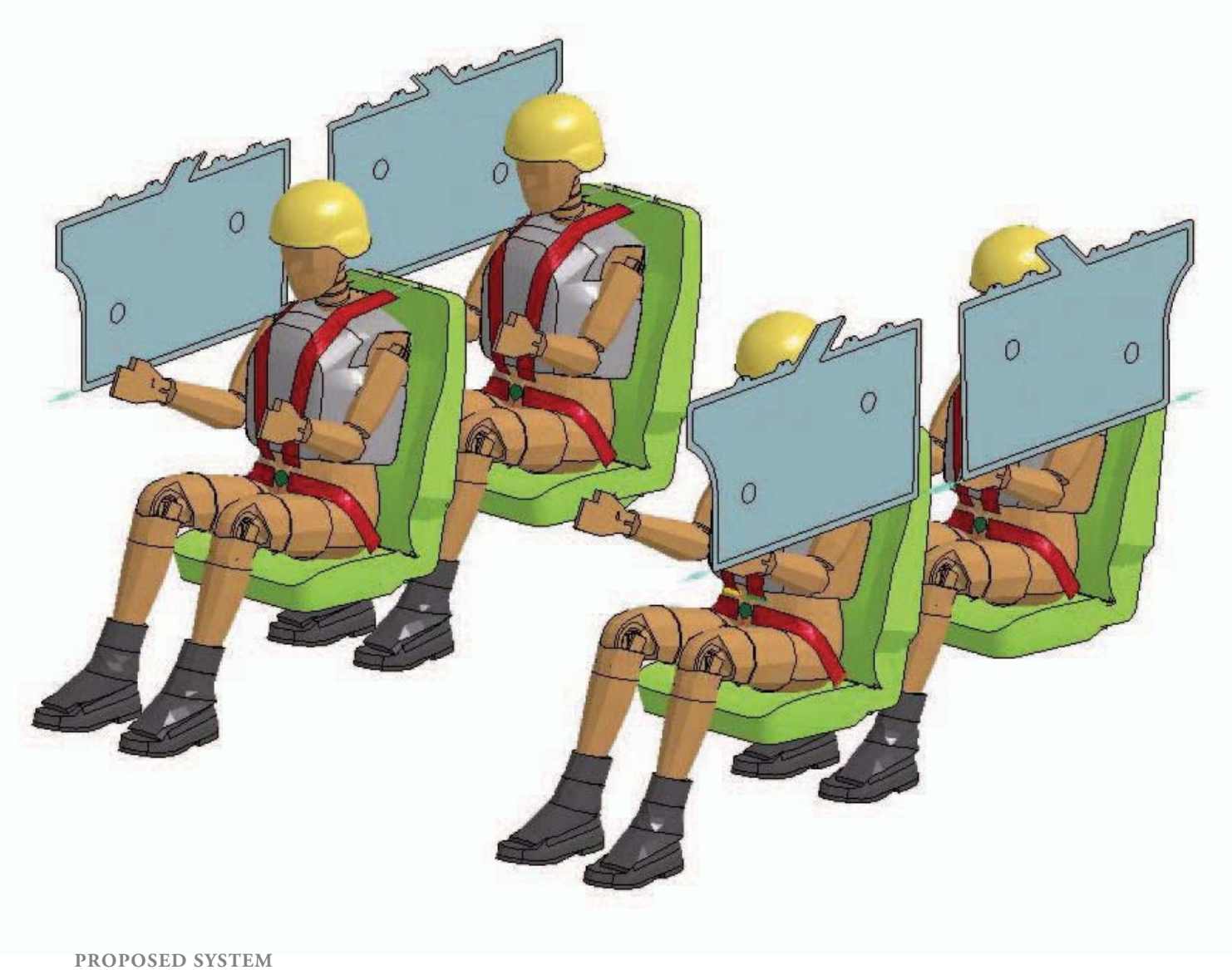
The Product Manager Light Tactical Vehicles (PM LTV) of Program Executive Office Combat Support and Combat Service Support (PEO CS&CSS), using a System Technical Support contract with AM General LLC, established a work directive in August 2009 to use industry expertise to propose a COTS-based kitted system for an occupant protection safety upgrade to the vehicle. By January 2010, the team decided to move forward with a proposal from TK Holdings Inc.

A safety system consisting primarily of COTS components to protect occupants entailed challenges such as system adaptation to integrate into the HMMWV and to quantify and qualify performance. Guidance from the TACOM Life Cycle Management Command Safety Office was to focus on rollovers and use industry best practices to quantify and qualify levels of improvement in occupant safety. It boiled down to form, fit, and function, along with effectively managing cost, schedule, performance, and risk.

STATIC DEMO
One commercial-off-the-shelf technology identified to mitigate rollover injuries was side-curtain air bags, as demonstrated here in a M1151A1 HMMWV. (Photo courtesy of TK Holdings Inc.)

PRODUCT BASELINE

At the outset of the work directive, the M1151A1 HMMWV four-passenger variant was selected for integration, as it was the most common variant in production at the time. Adapting a system of COTS items into the vehicle began with AM General drafting a performance specification and furnishing the supplier with vehicle computer-aided design (CAD) data.



PROPOSED SYSTEM
This generic diagram shows a proposed Occupant Protection During Rollovers System for the M1151A1 variant of the HMMWV. (Courtesy of TK Holdings Inc.)

The supplier encountered constraints that were atypical for the commercial automotive industry, including:

- Occupants with helmet and vest Personal Protective Equipment (PPE).
- Command, control, and communications equipment suites.
- A vehicle with a turret.
- Environmental conditions (harsh terrain, deepwater fording, and military electromagnetic effects).
- Providing a Safety Assessment Report (SAR) on the system.

PROVING FORM, FIT, AND 'STATIC' FUNCTION

The supplier, after being provided with a government-furnished equipment (GFE) vehicle, proceeded to fabricate, package, and integrate a production-representative complete system onto the vehicle for a static-vehicle demonstration of deploying side-curtain air bags. The supplier used CAD to fabricate the air bags and took AM General's cues on constructing durable waterproof wiring harnesses. Anthropomorphic test devices (ATDs), commonly known as crash test dummies, were the seated occupants.

The demonstration occurred in June 2010 and was successful, witnessed by representatives from PM LTV, the Safety Office, the U.S. Army Training and Doctrine Command (TRADOC),

AM General, and the U.S. Army Tank Automotive Research, Development, and Engineering Center.

The supplier's approach to optimizing an occupant protection system during rollovers was to substitute the conventional three-point (i.e., Type 2A – single shoulder and lap) seat belts with its electronic pre-tensioning, load-limiting, and automatically retracting five-point intelligent seat belts. TRADOC arranged for a Soldier user jury, which took place in October 2010. The feedback from Soldiers was positive, especially favoring the automatic retracting of the two shoulder and two lap belts.

PROVING 'DYNAMIC' FUNCTION

With the focus on rollovers, demonstrating combined side-curtain air bags and intelligent seat belts in action would coincide with the dynamics of a vehicle physically undergoing a rollover test event.

Although Federal Motor Vehicle Safety Standard (FMVSS) No. 208, *Occupant Crash Protection,* accounts for vehicle lateral rollovers, it pertains only to a vehicle being driven on a paved road at 30 mph and calls for it to be released using a test apparatus angled at 23 degrees.

An industry-practiced test method commonly known as the Dolly Sled Test conveys this information for a vehicle moving at a particular speed and angled as detailed in SAE (Society of Automotive Engineers) International's Standard J2114, *Dolly Rollover Recommended Test Procedure.* A test method for lateral ditch rollover events does not currently exist.

To ensure viability in physical rollovers of a HMMWV, the supplier ventured to find a test laboratory that had the capabilities to simulate the two types of lateral rollovers using a HMMWV body, whole or segmented, but discovered limitations of fixtures and cost considerations.

We even investigated creating a specially modified HMMWV Egress Assistance Trainer, but achieving a fast roll rate in seconds was impractical. All these factors led to using a modeling and simulation (M&S) approach first.

In January 2011, AM General coordinated with the supplier for a computer-aided engineering (CAE) M&S effort of HMMWV ditch and dolly rollovers. The supplier would use industry finite element models as seated occupants to simulate Soldiers. AM General provided to the supplier a CAE model of the vehicle.

CHOOSING TYPES OF SEATED OCCUPANTS

Striving for efficient quantities and use of GFE vehicle assets to be consumed during rollover test and evaluation (T&E) led to examining combinations of the 50th male, 95th male, and 5th female percentile adult human types and placement as driver, commander, and rear-seated occupants. The best solution for a practical arrangement of ATDs would then have to be part of the M&S for assessing levels of injury criteria.

Meetings with the Safety Office and TRADOC determined that the use of 95th and 5th percentile types ensured the effectiveness of those extremes, thus eliminating the need to use iterations of 50th percentile types. A configuration of all 95th and all 5th types seated was an option.

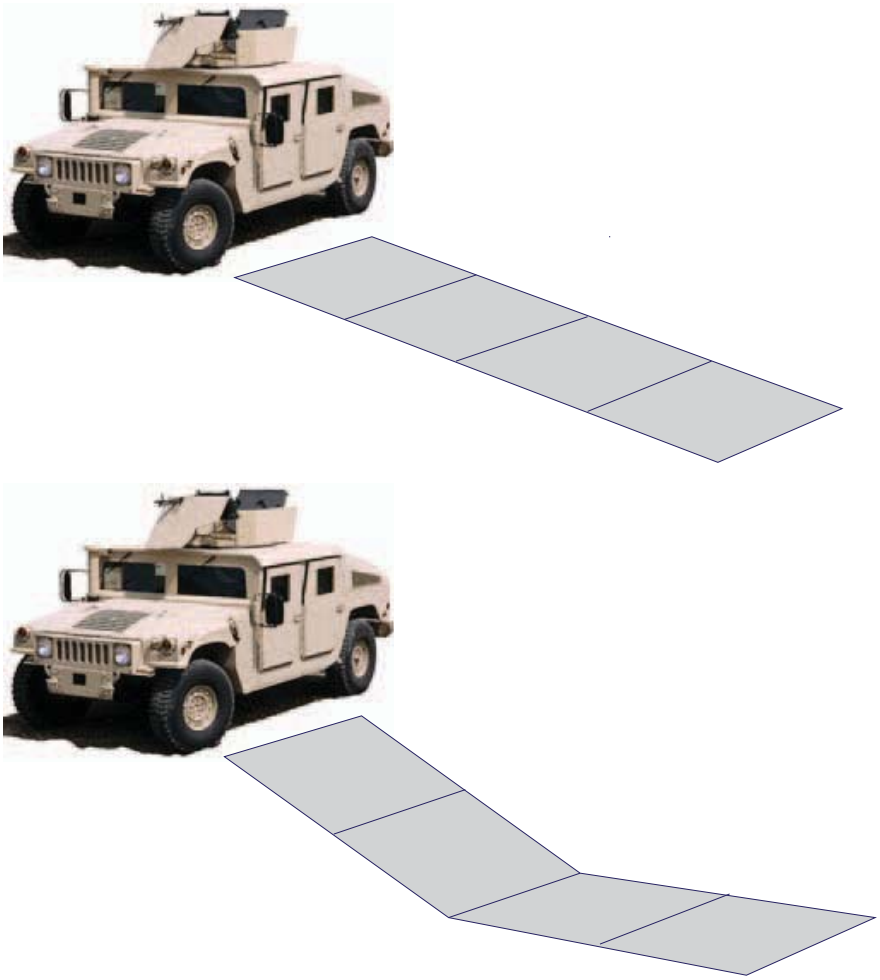
The solution deemed best was to seat combinations of 95th driver, 5th commander side, 5th left rear side, and 95th right rear side for one vehicle asset, and to reverse the arrangement for a second vehicle.

Using such combinations of occupants meant two vehicle test assets for ditch rollovers and dolly rollovers—a fixed sequence of rollovers based on anticipation that assets for ditch testing would be sufficiently intact to be reused for subsequent dolly testing.

MODELING AND SIMULATION

The supplier began M&S using FMVSS 208 vehicle occupant injury criteria for head injury and forces to the chest, neck, and lower body—criteria typical

STATISTICS FROM THE U.S. ARMY COMBAT READINESS/ SAFETY CENTER SHOW THAT OCCUPANTS WHO WEAR SEAT BELT RESTRAINTS PROPERLY ARE MORE LIKELY TO SURVIVE A ROLLOVER, SUFFERING LESS SEVERE INJURIES WHILE REMAINING INSIDE THE VEHICLE.



DOLLY ROLLOVER (TOP)
This generic diagram shows the modeling and simulation (M&S) for a dolly rollover of the M1151A1 HMMWV.

DITCH ROLLOVER (BOTTOM)
This generic diagram shows the M&S for a lateral ditch rollover of the M1151A1 HMMWV. (Images courtesy of TK Holdings Inc.)

for occupants without PPE vest and helmet. Thus, the baseline excluded PPE, emphasizing the predetermined seating arrangements of occupants. Follow-up rollover T&E using instrumented ATDs would validate findings.

FMVSS 208 and SAE J2114 readily applied to the M&S and T&E for vehicle dolly rollovers. Assumptions were used for M&S of ditch rollovers when needed. The first was to have the vehicle moving at 5 mph, yet decisions had to be made on whether the type of ditch would be alongside an embankment or hill, and at what height and angle. One of the supplier's modelers realized that by doubling the vehicle speed, the computer processing time would be substantially less. Correlating the vehicle's doors and roof structural integrity with M&S also allowed an examination of various parameters for ditch aspects.

Further assumptions in comparison with actual rollovers included the condition of the vehicle's tires making contact with surface, the type of surface, and the system's sensors and algorithm parameters for side slip, roll rate, and acceleration.

SYSTEM PERFORMANCE

In quantifying and qualifying the performance of the system, safety of the vehicle occupants is an operational requirement, and occupant injury criteria become critical. Consideration also must be given to system characteristics relating to occupant human factors (such as accommodation, ingress, and egress), environmental constraints, reliability, and maintainability.

The requirements in AM General's performance specification pertained to components of the system as well as having the system installed in a vehicle. The supplier would handle the testing of its system components. The T&E of the system installed in a vehicle would be a collaboration among the government, AM General, and the supplier.

INVOLVING ATEC

As the M&S effort moved along, planning the rollover T&E required involving the U.S. Army Test and Evaluation Command (ATEC) to address not only a test plan, but also a safety confirmation of this system on a HMMWV.

Initial discussion with ATEC representatives centered around how to properly test the reliability of the system, because ensuring that air bags will deploy is crucial, while having air bags deploy inadvertently on occupants is not desirable.

IN QUANTIFYING AND QUALIFYING THE PERFORMANCE OF THE SYSTEM, SAFETY OF THE VEHICLE OCCUPANTS IS AN OPERATIONAL REQUIREMENT, AND OCCUPANT INJURY CRITERIA BECOME CRITICAL. CONSIDERATION ALSO MUST BE GIVEN TO SYSTEM CHARACTERISTICS RELATING TO OCCUPANT HUMAN FACTORS (SUCH AS ACCOMMODATION, INGRESS, AND EGRESS), ENVIRONMENTAL CONSTRAINTS, RELIABILITY, AND MAINTAINABILITY.

There would be an impact on cost and schedule each time the air bags deployed, intentionally or unintentionally.

Testing this system, especially its sensors, on a vehicle ultimately will entail driving thousands of miles across various types of terrain, deepwater fording, high and low temperatures, and pressure washings.

Additionally, ground system electromagnetic environmental effects such as electromagnetic compatibility with jammers and radios, external electromagnetic fields, and electrostatic discharge are essential factors in evaluating performance.

The ATEC representatives expect to see the supplier's M&S findings, component-level test results, and SAR, and plan to witness testing of actual vehicle rollovers at a capable commercial test laboratory.

CONCLUSION

The supplier's M&S findings are ongoing. Planned T&E of ditch and dolly rollovers of HMMWVs integrating the system would be performed at the MGA Research Corp. facility in Wisconsin.

Subsequent M&S and T&E phases need to investigate the effects of having vest and helmet PPE on simulated occupants. A Variant Adaptability Plan has been drafted to assess system integration carrying over to another vehicle, such as a two-crew variant.

This article illustrates how the Army can handle the challenges of adapting COTS technologies into a HMMWV.

For more information, contact through Global Address List: USARMY Detroit Arsenal PEO CS CSS Mailbox PM-LTV.

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EYEING THE HEAT
Modifying and using a HMMWV Egress Assistance Trainer (HEAT), such as this one on display at the U.S. Army Tank Automotive Research, Development, and Engineering Center in Warren, MI, was considered in adapting commercial-off-the-shelf safety measures to mitigate rollover injuries, but achieving a fast roll rate in seconds was impractical. (U.S. Army photo.)

CLOSING *a* SECURITY GAP

Integrating antiterrorism measures into the contract support process reduces vulnerability

by Craig F. Benedict

ON THE FRONT LINES OF CONTRACTING

The Army's Antiterrorism Strategic Plan vision is to "successfully prevent terrorist attacks" by finding security gaps. These gaps may exist in contracting activities unless contracts include the necessary protective measures. On March 19, 2011, a man contracted to provide security for Forward Operating Base (FOB) Frontenac in Afghanistan's Kandahar province shot and killed two Soldiers and wounded four others. Here, 1SG Jeffrey Chambers, 5th Cavalry Regiment, 170th Infantry Brigade Combat Team, addresses his Soldiers during a briefing at FOB Frontenac Aug. 3, 2011. (U.S. Army photos.)

"War, like most other things, is a science to be acquired and perfected by diligence, by perseverance, by time, and by practice."
—Alexander Hamilton, *The Federalist Papers*

On March 19, 2011, a man contracted to provide security for Forward Operating Base (FOB) Frontenac in Afghanistan's Kandahar province shot and killed Army SPC Rudy A. Acosta and CPL Donald R. Mickler Jr., wounding four others.

It was not the first time a contractor has attacked U.S. forces from within. A contractor allegedly used illegal immigrants with false identification to provide janitorial services for newly constructed buildings at an Army post in the United States, law enforcement officials disclosed in July 2010.

It is time to review how we address the issue of security in the contracting process. How can we "perfect by diligence… and by practice" procedures to ensure that we prevent a terrorist attack?

The Army's antiterrorism (AT) vision is to "successfully prevent terrorist attacks." Initiated six years ago in the Army Antiterrorism Strategic Plan, this vision drives continuous assessment to find security gaps that demand improved protective measures.

Clearly, rigorous searching often reveals surprising results. As the incidents mentioned above indicate, closer coordination between contracting elements and the requiring activity's functions of AT and operations security (OPSEC) might have improved the odds of prevention. Subsequent assessments have supported that Army organizations did not fully integrate AT and OPSEC into the contracting process.

AVENUES OF ATTACK

The process presents an interesting challenge. Through contracts, Army organizations fill needs that are not otherwise satisfied, yet the contracted service or product can make the organization vulnerable to terrorist attack.

There are at least two scenarios in which terrorists could use contracting as an avenue to attack Army missions. One is infiltration of Army activities as part of a contract, as occurred at FOB Frontenac. The other is an attack on contractors themselves, thus affecting Army missions.

What measures can mitigate these possibilities? To be sure, greater protection from terrorist attack lies in a coordinated effort involving many functions, but primarily between the requiring activity and the contracting activity. It is the requiring activity's responsibility to ensure that necessary AT and OPSEC measures are considered in developing a contract and the resulting requirements package. It is the contracting activity's responsibility to integrate the selected AT and OPSEC measures into the solicitation and resulting contract. Figure 1 on Page 68 sums up the process.

Necessary coordination starts at the very beginning of the contracting process. Initial planning determines the needed support for the requiring activity. It also initiates routine staff planning to execute a risk assessment, review current and future threats, evaluate critical elements of the organization, determine organizational vulnerabilities, and review local and Army policies requiring security measures.

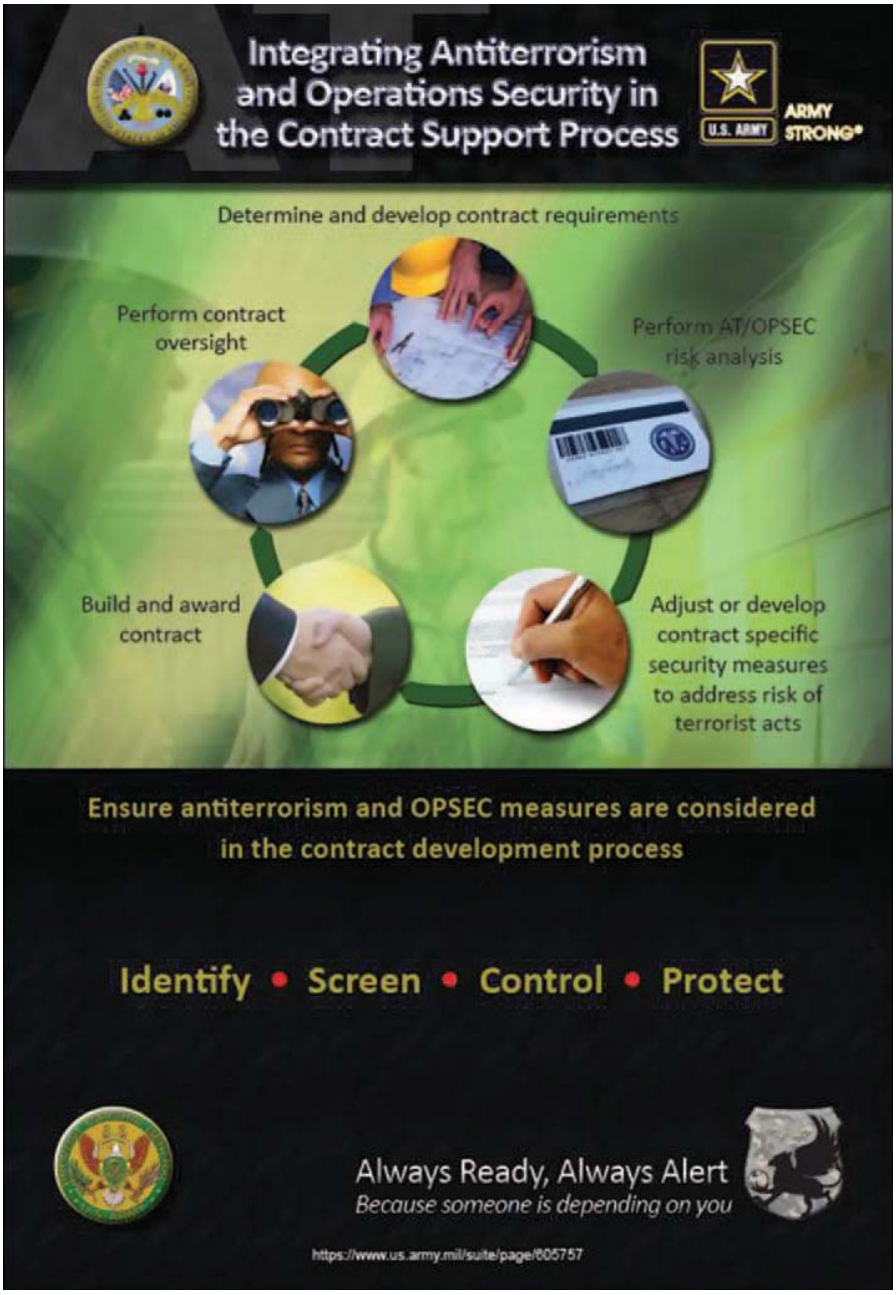
Messages such as ALARACT 110/2011, *Potential Installation Access Control Vulnerability with Non-CAC Eligible Contractors* (DTG: 212251 Mar 11), provide direction and guidance for vetting personnel in certain circumstances. For some cases in which AT and OPSEC are not at issue, this initial review ends the AT and/or OPSEC involvement. Initial planning allows the requiring activity to define the requirement and determine what, if any, security measures might be a component of the prospective performance work statement (PWS).

DEVELOPING THE REQUIREMENT

The next step is to develop the requirement. Performing a risk analysis, the AT officer (ATO) and OPSEC officer review the draft PWS to determine whether security matters have been considered and addressed adequately. This AT/OPSEC risk analysis determines the entries that should become a part of the requirements package. In some cases, the AT and OPSEC officers can review existing security-related contract language or clauses for applicability. If these do not effectively provide for the requisite security, they can devise new language that more precisely fits a specific situation.

Integrating Antiterrorism Measures Process Poster

Figure 1



Greater protection from terrorist attack lies in a coordinated effort involving many functions, primarily between the requiring activity and the contracting activity. The requiring activity needs to ensure that necessary antiterrorism (AT) and operations security (OPSEC) measures are considered in developing a contract and the resulting requirements package. The contracting activity needs to integrate the selected AT and OPSEC measures into the solicitation and resulting contract. (SOURCE: Deputy Assistant Secretary of the Army for Procurement.)

The ATO should coordinate this with appropriate staff officers, who may have additional security concerns, and modify the language accordingly. Many organizations have a contract support officer on staff, who becomes the link with the contracting activity and can assist in the process. The ATO, at a minimum, should ensure the necessary consideration of personnel identification requirements, that reasons for personnel access are validated, and that the type of access and privileges are appropriate.

Training is another consideration for inclusion in the requirements package. Contracted workers may require Level I AT awareness training (as detailed in Army Regulation 525-13, *Antiterrorism,* if they are deploying overseas. However, many situations require other training if Level I training is too detailed or not appropriate. Level I training is suggested in DoD policy, but many contracts require simpler training that fits the contractors and the environment.

It is possible that the contract personnel, like those hired as host nation workers, require only iWatch training; a phone number to report suspicious activity; or training on other fundamental information-sharing processes. This would provide contractor employees basic information to protect themselves, help protect those around them, and perhaps reduce cost compared with full Level I AT training.

These considerations and others represent a checklist for ensuring that the PWS contains the proper and necessary words describing required security measures to mitigate specific contract support–related AT risks.

AVAILABLE EXPERTISE

Satisfied that the requisite measures are

GETTING THE WORD OUT

Contract personnel and those hired as host nation workers benefit from iWatch training, including an easy-to-carry card such as this one with text on front (left) and back, and a phone number to call to report suspicious activity.

included in the requirements package, the AT and OPSEC officers sign the requirements package cover sheet, indicating the conclusion of proper AT/OPSEC review before contract solicitation. During and after the solicitation and award of the contract, the contracting officer (KO) may ask for assistance from the requiring activity's ATO in evaluating source selection criteria as a technical advisor.

The ATO may request assistance from the local provost marshal's office in using terrorist screening databases to conduct background checks on contract employees. These databases could include the National Crime Information Center, local law enforcement agency background checks, the National Law Enforcement Telecommunications System, and the Defense Incident-Based Reporting System.

In addition, during contract execution, the ATO may conduct a post-award risk evaluation based on the contract award and changes to threat levels. Moreover, if requested, the AT and OPSEC officers could advise the KO or contracting officer's representative (COR) on execution of the quality assurance surveillance plan for assessing AT/OPSEC measures in the contract. Any changes in the threat or friendly situation could trigger the possibility of adjusting the contract itself. Anticipating potential changes during the planning sequences, before completing the requirements package, can avert problems when those events occur. The ATO must be attuned to the possibility and include appropriate review in connection with any changes to the Force Protection Conditions. If necessary, the ATO should contact the KO or COR for any changes to AT-related procedures that could affect the supporting contractor.

MANAGING THE WORKLOAD

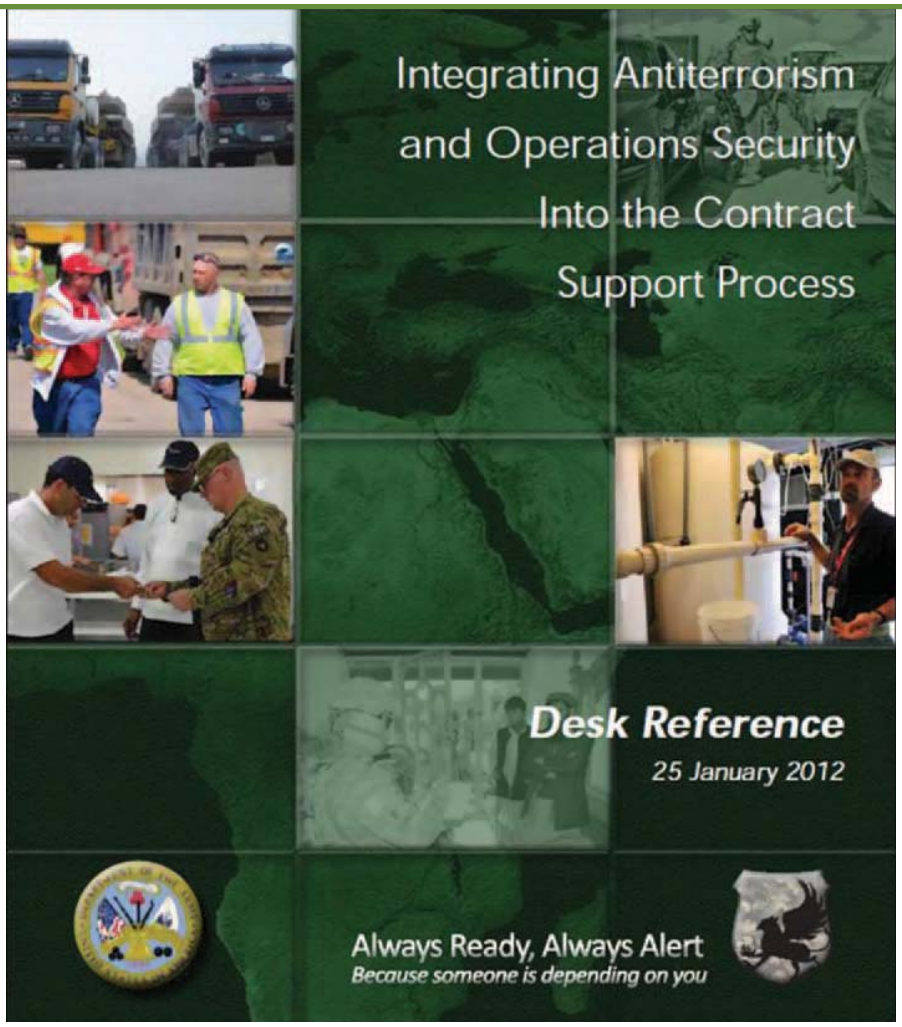
The requirement to integrate AT and OPSEC into the contract support process is not new. It has been promulgated in Army AT policy since 2006. If the requirement seems to be a tremendous addition in workload, perhaps a closer examination of the problem will reveal possible solutions.

Many Army organizations, as requiring activities, execute hundreds or even thousands of contracts in a given year. With volume this high, it might seem excessive for one AT or OPSEC officer to review every requirements package. Most often, however, organizations can develop ways to reduce the load.

Many contracts are similar enough to embed necessary procedures in a unique command policy covering all contracts with the same security measures. In other cases, the contracts are spread through the chain of command, and multiple ATOs can evaluate the risk at the appropriate level. Distributing the load can reduce time spent reviewing all requirements packages. In still other situations, when demand is truly high with many differing requirements, commands can train additional AT or OPSEC officers to focus specifically on contract security needs.

In January, the Army issued the ALARACT 015-2012 message, *Use of an Antiterrorism/Operations Security (AT/OPSEC) in Contracting Cover Sheet for Integrating AT/OPSEC into the Contract Support Process*, stating that "a signed AT and Operations Security (AT/OPSEC) cover sheet is required to be included in all contract support requirements packages except for supply contracts under the simplified acquisition level threshold, field ordering officer actions and Government purchase card purchases."

In February, the Deputy Assistant Secretary of the Army for Procurement released a Policy Alert that indicated that the cover sheet would become mandatory on May 1. The date was subsequently adjusted to July 1 by an updated Policy Alert (PARC Policy Alert #12-22,



HOW TO INTEGRATE ANTITERRORISM MEASURES

The Army developed this Desk Reference describing how to integrate AT and OPSEC measures at each phase of the contract support process. It is available on Army Knowledge Online, Office of the Provost Marshal General, Antiterrorism Enterprise Portal (https://www.us.army.mil/suite/page/605757). The reference offers suggested language to include in the performance work statement, along with elements of a quality assurance surveillance plan.

Revision #01, *Integrating Antiterrorism (AT) and Operations Security (OPSEC) Contract Support Desk Reference*, dated April 19, 2012) to allow more time to fully implement the requirement.

The ALARACT and policy alerts are available on Army Knowledge Online, Office of the Provost Marshal General, Antiterrorism Enterprise Portal (OPMG ATEP) **(https://www.us.army.mil/suite/page/605757)**. The cover sheet provides a direct link between the contracting authority and the unit AT and OPSEC staff. The form will encourage integration of AT/OPSEC into the contract support process through suggested contract language and consideration of AT/OPSEC concepts in a PWS.

Recognizing the possibility of a terrorist attack through the contract support process, the Army also developed a Desk Reference to help commands develop useful procedures to accommodate the requirement. The Desk Reference describes AT/OPSEC integration at each phase of the contract support process and underscores the risk analysis.

Available on the OPMG ATEP, it offers suggestions for PWS language and elements of a quality assurance surveillance plan. It provides the necessary tools to ensure that contracting specialists and AT/OPSEC operators work together to reduce the possibility of terrorist attacks related to commercially provided services supporting Army activities.

CONCLUSION

Terrorists seek to identify exploitable vulnerabilities as they conduct planning and surveillance. The history of attacks indicates that terrorists look for any gap in protection.

Without awareness and collective effort, contracts can become one of those gaps. We can prevent this and close off one more potential avenue for prospective terrorist attack. While it is not the science that Alexander Hamilton suggested, we can "perfect" procedures that close the "contracting gap" and help prevent terrorist attacks.

CRAIG F. BENEDICT, a retired Army Infantry officer, is a Senior Military Analyst in the Antiterrorism (AT) Branch of the Office of the Provost Marshal General of the Army. Benedict authored the Army AT Strategic Plan, *Phases I and II. A contractor for Innovative Strategies, he is a member of the Process Action Team assigned to execute the strategic objective of improving AT/OPSEC integration into the contract support process. Benedict holds a B.A. in history from Southern Methodist University and is a graduate of the U.S. Army Command and General Staff College and the Armed Forces Staff College.*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SUPPORTING SMART CONTRACTING
The U.S. Army Corps of Engineers (USACE), one of the most active contracting organizations in theater, is part of the Source Selection Community of Practice (SSCoP). Here, USACE Afghanistan Engineer District - South contractors level the ground at Kandahar Airfield as part of Phase 2 construction, June 30, 2011. (Photo by Karla Marshall, USACE Afghanistan Engineer District - South.)

COMMUNITIES *of* PRACTICE

ACC gathers expertise, experience to solve business problems in four complex areas of contracting

by Virginia E. Mitchell

The U.S. Army Contracting Command (ACC) has established communities of practice (CoPs) to help standardize its business processes and practices in critical, complex areas of interest across the enterprise.

"A community of practice provides a forum for subject-matter experts and practitioners of a discipline to interact, to share knowledge and experiences pertinent to their tasks, and to solve business problems," said J.R. Richardson, Chief of ACC Contracting Operations. "CoPs provide a mechanism for individuals to keep current in the developments within a shared discipline through communication."

ACC is developing four different communities in the following areas: source selection, Foreign Military Sales, peer review, and cost and price. With outreach to other organizations within and outside the Army, CoP membership has grown continually.

SHARED GOALS, EXPERTISE

Establishing a CoP "means identifying a champion and senior advisors who embrace each of the community's goals and objectives," Richardson said. "In addition, the communities will have members and other special advisors who are knowledgeable and experienced in the particular discipline as well as committed to the community. While each of the communities is unique and requires its leaders to have specific skill sets and backgrounds, they also cross over in certain ways and are encouraged to cross-communicate and share resources whenever needed."

For example, the Source Selection Community of Practice (SSCoP) and Peer Review CoP share members, because source selection is directly affected by the peer review process. Findings, whether positive or negative, identified during peer reviews may be items that should be shared across the enterprise so that they are institutionalized and we learn from them.

According to Jason Detko, Chief, ACC Contracting Operations Contracting Policy Division, the concept of a CoP is not new. It is essentially a group of people with a desire to communicate, collaborate, share information and experience, and find ways to solve problems and issues within their area of practice or profession.

PROBLEM SOLVING

Members of the SSCoP gather from around the country, both in person and virtually, to share their ideas at the Defense Acquisition University's Huntsville campus. The week-long offsite included several briefings and discussions of a variety of topics. (Photo by Beth Clemons.)

"It is important to establish communities around areas of practice that are complex and where capability and expertise must be sustained," Detko said. "The government is experiencing a 'brain drain' as the baby boomers draw closer to retirement. We must find ways to capture and pass on what they know.

In addition to working toward standardizing and achieving consistency in business processes, preserving existing knowledge and growing new expertise is a mission readiness imperative. Further, establishing a ready capability to communicate and collaborate virtually to assist practitioners is a valuable, efficient approach given the budgetary constraints across the government."

Richardson suggested that the idea isn't so much to do things differently, but rather to view and do things more alike than differently across the enterprise. This concept is in keeping with the strategic priority to standardize, improve, and ensure high-quality contracting support, business processes, and policies.

"Even within the same organization, there can be vast differences in the way the same practice, action, or activity is thought of and executed," Richardson said.

For example, the point at which the contracting office engages in preparing a complex service requirement to be competitively awarded can vary from program to program, but can be a determining factor in the success and timeliness of execution.

Early involvement by all stakeholders enables the team to reach a common understanding of roles and responsibilities, critical documentation requirements, and a realistic milestone schedule from acquisition planning through contract award.

"The objective is to work toward a more consistent approach to processes and execution, as well as apply best practices and lessons learned. It can make cross-utilization of resources inside and outside organizations easier," Richardson said.

"Over time, when our alikeness begins to overcome our differentness wherever possible, we will likely see that industry will also benefit as the solicitation and source selection process becomes more consistent and predictable."

FIRST TASK: SOURCE SELECTION TRAINING

The SSCoP was the first to be stood up within ACC, borne of an integrated process team established to produce source selection training in support of

the *Department of Defense Source Selection Procedures*. "When DoD marked July 1, 2011, as the issuance date for the new procedures, the need for a CoP specializing in the business of source selection became crystal clear," Richardson said.

It is important that the CoPs reach out beyond the Army and into other DoD entities, Richardson noted.

"The SSCoP membership is a joint-service program," Richardson said. "In addition to representation from most ACC organizations, there is now member representation from the Army Corps of Engineers, the Program Executive Office Simulation, Training, and Instrumentation, the Deputy Assistant Secretary of the Army (Procurement), Army Medical Command, the Air Force Acquisition Center of Excellence, the Naval Air Systems Command's Acquisition Center of Excellence, and the Defense Acquisition University."

Detko said one of the immediate benefits of the SSCoP was the training created for the DoD source selection procedures.

In addition to the charter and communication plan, this was the group's first tasking. The training was delivered to the various organizations by their respective SSCoP members with the assistance of the ACC Office of Counsel, Detko said. Another major undertaking of the SSCoP was revision of the Army Source Selection Manual, now entitled the *Army Source Selection Supplement (AS3)* to the DoD procedures.

This document is now aligned with the DoD procedures. It was written and reviewed by the SSCoP with further vetting across the Army, Detko said. The draft *AS3* is under review by the Office of the Deputy Assistant Secretary of the Army (Procurement), with coordination to resolve questions as it moves forward.

A JOINT-SERVICE EFFORT

The SSCoP has membership from multiple services, representing, in addition to numerous Army organizations, the Acquisition Centers of Excellence of the Naval Air Systems Command and the U.S. Air Force, and the Defense Acquisition University. Here, an F/A-18D Hornet lands aboard the aircraft carrier USS Dwight D. Eisenhower, in the first arrested landing of a surrogate aircraft emulating an unmanned vehicle, July 2, 2011. (Photo courtesy U.S. Navy.)

CONCLUSION

The SSCoP has developed a website, with a team discussion board for internal CoP collaboration, a general discussion board where questions can be submitted, frequently asked questions, and the "tip of the day," Richardson said.

"There are also highly relevant articles from various sources, to include the National Contract Management Association, posted under 'Tools of the Trade,' and a command counsel corner/news-you-can-use tab that provides a breakdown of recent, relevant Government Accountability Office and U.S. Court of Federal Claims cases, to help practitioners understand what the bottom-line takeaways and main points are in a few pages, versus the pages and pages as the cases are published," Richardson said.

"Communities of Practice are true force multipliers for the global contracting community to leverage and share resources across the Joint enterprise," Detko said.

The SSCoP Army Contracting Command Portal/SharePoint site is at **https://acc.aep.army.mil/Contract_Operations/SSCOP/default.aspx**. Access is limited to registered users.

Register at the U.S. Army Materiel Command Enterprise Portal, **https://adfs.aep.army.mil/Registration/default.aspx**, using a valid DoD Common Access Card; select "Email Certificate" when prompted.

For more information, contact Virginia Mitchell at ***Virginia.e.mitchell@us.army.mil.***

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COST MANAGEMENT LEADERS

CAM-I Target Costing Best Practices Interest Group provides guidance and support in critical area

by Elaine R. Jones, Charles W. Stirk, and William Dummer

Target costing is the process of establishing the allowable incurred cost of a product or service that achieves required margins. It is a market-driven cost management system whereby cost targets are set early in the development of a product or service. Target costing has been used for vendor contracts to reduce the contractual amounts. For Armed Services Members of the Consortium for Advanced Management – International (CAM-I), target costing has been used for cost containment.

CAM-I is an industry-led research organization consisting of sponsoring companies and academics who collaborate to study and solve management problems and critical business issues common to the group in the areas of cost, process, and performance management.

The Target Costing process is structured to ensure first that the design of a product or service can be produced or executed for the target cost. This is accomplished by applying a disciplined "should-cost" methodology. Appropriate should-cost estimating tools are intended to reflect the actual cost structure and capabilities of the intended supply base. Once the design is determined to be capable of meeting the target, the should-cost will be used in negotiation to achieve an identical "will-cost."

Setting the cost target requires consideration of the voice of the customer, market research, competitive intelligence, and internal strategic plans. The cost target guides the product development team throughout the product development cycle to find the optimal concept and design solution that meets the customer's value expectations and maximizes the potential for launching the product at the desired margin (see Figure 1, Page 78).

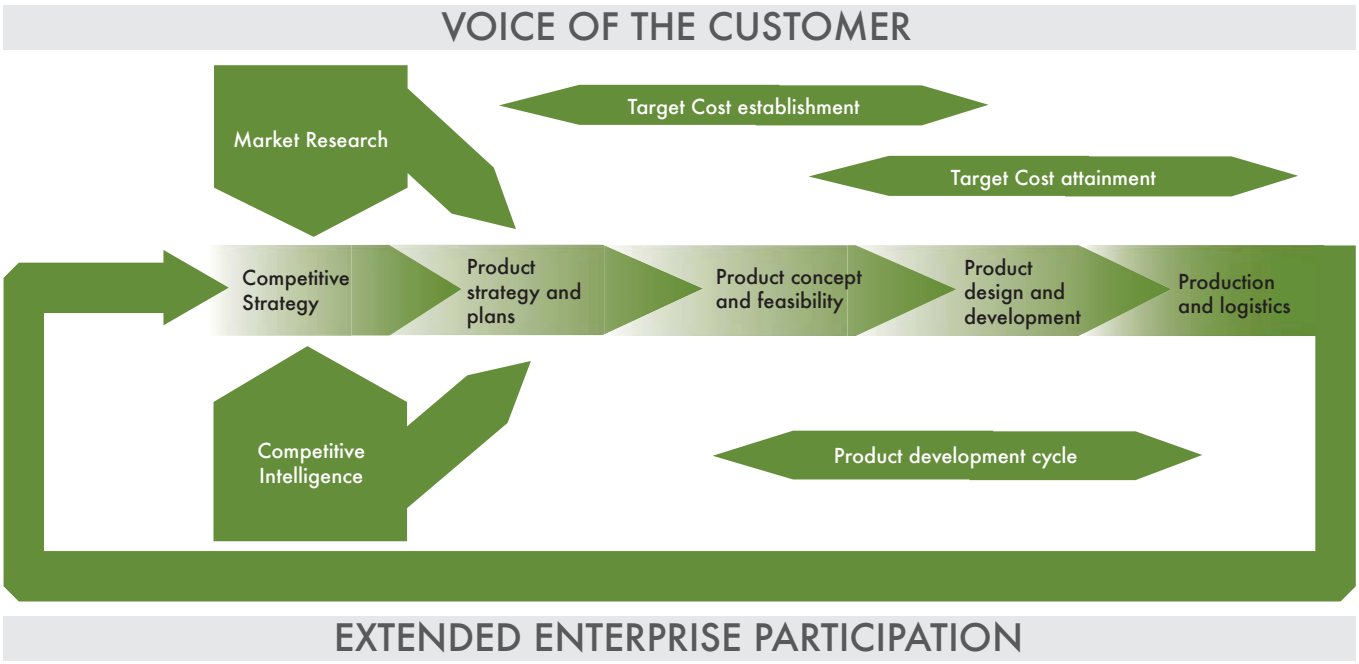
Detailed design of a product or process is typically managed at the system or subsystem level. This requires allocation of the product- or program-level cost target to system/subsystem teams, ideally organized cross-functionally. Continual monitoring

SUPPLY CHAIN COORDINATION

The Target Costing Best Practices Interest Group is working to improve the ability to share cost information between models and processes and across the supply chain. Here, dozens of factory-fresh Bradley M2A3 Infantry Fighting Vehicles are positioned Oct. 11, 2011, at the Port of Busan, Korea, ultimately to replace older models in Army Prepositioned Stocks—4 facilities at Camp Carroll, Korea. (U.S. Army photo by Bryan Willis, 19th Expeditionary Sustainment Command.)

Target Costing (CAM-I)

Figure 1



Setting the cost target requires consideration of the voice of the customer, market research, competitive intelligence, and internal strategic plans. (SOURCE: Consortium for Advanced Management – International.)

of progress toward achieving the cost targets becomes a formal part of the process of finding the optimal design or solution.

A COST-CUTTING ALTERNATIVE

The basic principles and methodology of target costing are equally applicable to service products and process improvement initiatives in the private and public sectors. To illustrate this, imagine the following budget reduction scenario:

Two of the most common approaches to military budget reduction are the pro rata cut and complete program elimination—in essence, "Everybody take out 10 percent, or we'll have to eliminate Program XYZ." Eliminating a program, while it may seem a clear way to meet budget constraints, may not always be necessary.

As an alternative, the target costing methodology would first identify the total desired end result, mapped to the processes based on a prioritization and weighting of customer needs. The end result is a budget that reflects, proportionally, what the customer sees as important.

MANUFACTURING READINESS LEVELS

The CAM-I Target Costing Best Practices Interest Group, whose members include technical experts from the Army, Air Force, Alta Management LLC, Boeing Co., CostVision Inc., Navistar Inc., and Whirlpool Corp., is developing a bulletin on the leading practices for Manufacturing Readiness Level (MRL) cost data models and processes.

DoD is establishing MRLs to manage risk during manufacturing process development. Over the past several years, DoD has held several ManTech (Manufacturing Technology) Program workshops to define and refine criteria for assessing new designs for manufacturing readiness. The Target Costing Interest Group has been providing input to the Cost Modeling and Cost Analysis sub-threads of ManTech's MRL Matrix, which includes criteria that match its *MRL Deskbook*.

Following are descriptions to help interpret the cost threads.

SUPPORTING SHOULD-COST/WILL-COST

The Target Costing process supports DoD's emphasis on "should-cost/will-cost" analysis in setting acquisition prices, as championed by Frank Kendall, Under Secretary of Defense for Acquisition, Technology, and Logistics. Target Costing is structured to ensure that the design of a product or service can be produced or executed for the target cost, by applying a disciplined should-cost methodology. Here, Kendall talks with BG Michael R. Smith, then-Director, Iraq Training and Advisory Mission – Police and Deputy Commanding General (Advising and Training), U.S. Forces – Iraq, during a visit to Forward Operating Base Union III in Baghdad, Sept.19, 2011. (U.S. Army photo by SSG Edward Daileq.)

MRL 1-2: At this level, the cost model approach should be defined and the cost elements identified. For new materials and/or basic manufacturing processes being developed in DoD 6.1 and 6.2 science and technology phase efforts, the manufacturing science and advanced manufacturing technology initiatives that will most improve affordability need to be identified for investment. This means that the root cause of costs must be analyzed, using models that represent the details of the manufacturing process.

MRL 3: Initial cost targets and risks are identified, and sensitivity analysis is performed to define cost drivers and the production development strategy from the laboratory to pilot effort to factory. Cost models based on a high-level process flow chart focus on critical segments of the overall manufacturing process. Each process step should identify resources (including tooling, equipment, labor, and materials) and times (setup and cycle). These process segment cost models reveal the cost drivers and scale-up issues, and help focus funding on further manufacturing development initiatives that will reduce the cost.

MRL 4: Cost models from MRL 3 are broken down into more detailed process flow chart models. These detailed cost models are driven by key characteristics of the material, process, or part, such as dimensions, tolerances, and material properties. They are also driven by the process variables needed to achieve the key characteristics—for example, equipment settings, tooling wear rates, and indirect material consumption rates. The flow charts also reveal misinterpretations or gaps in knowledge of the cost that need to be addressed.

MRL 5: The process charts from MRL 4 are further extended to a full end-to-end value stream map of the current state, from raw material to finished product. Prototype components produced in

MANAGING RISK IN MANUFACTURING

Manufacturing Readiness Levels are an outgrowth of DoD efforts to manage risk during manufacturing process development. Over the past several years, DoD has held several ManTech (Manufacturing Technology) Program workshops to define and refine criteria for assessing new designs for manufacturing readiness.

APPROPRIATE "SHOULD-COST" ESTIMATING TOOLS ARE INTENDED TO REFLECT THE ACTUAL COST STRUCTURE AND CAPABILITIES OF THE INTENDED SUPPLY BASE. ONCE THE DESIGN IS DETERMINED TO BE CAPABLE OF MEETING THE TARGET, THE SHOULD-COST WILL BE USED IN NEGOTIATION TO ACHIEVE AN IDENTICAL "WILL-COST."

a relevant environment, or simulations, drive end-to-end cost models. The breakdown of the cost model details in MRL 5 contains specific information such as materials, labor, equipment, tooling special test equipment, setup, yield/scrap/rework, work in process, and capability or capacity constraints.

Since the target production rates and capacity constraints are known, simulation models can drive the cost models and determine potential capacity bottlenecks and the effect of variability on the manufacturing process and supply chain. Decisions influenced by cost models include design choices, make or buy, capacity, process capability, sources, quality, key characteristics, yield/rate, and variability.

MRL 6: The full-stream should-cost models from MRL 5 are driven by design requirements, material specifications, tolerances, integrated master schedule, results of system and subsystem simulations, and production-relevant prototype demonstrations. Because the simulation models extend up to the system level and there is an integrated master schedule, the cost models can be used to analyze alternatives and optimize plans. Because suppliers have been identified, the simulations can extend across the supply chain; the cost models therefore should include packaging, shipping, and acceptance costs.

Costs are updated and analyzed using information from prototype system and subsystem production actuals to ensure that target costs are achievable. Cost targets are allocated to subsystems and cross-functional teams. The teams develop cost reduction and avoidance strategies.

MRL 7: The cost models from MRL 6 are driven by design features, detailed designs, and high-quality data from a

THE TARGET COST INTEREST GROUP WITHIN THE CAM-I ORGANIZATION IS WORKING TO IMPROVE THE ABILITY TO SHARE COST INFORMATION BETWEEN MODELS AND PROCESSES AND ACROSS THE SUPPLY CHAIN. THIS WILL BE AN ONGOING EFFORT, GIVEN THE BROAD SCOPE OF THE COST TOPIC.

production-representative environment to provide feedback to detailed systems design, to analyze engineering change requests, and to design factory layout. Cost models are used at MRL 7 to descope requirements so that program cost and schedule targets can be met. Cost estimates are rolled up to the subsystem and system levels so that they can be tracked and compared to targets, and cost reduction efforts and incentives can focus on the gaps and risks.

CONCLUSION

The Target Cost Interest Group within the CAM-I organization is working to improve the ability to share cost information between models and processes and across the supply chain. This will be an ongoing effort, given the broad scope of the cost topic, but CAM-I is uniquely qualified for it, with its background in standards and the involvement of experts from industry, government, and academia.

For more information on target costing, refer to *Target Costing, The Next Frontier in Strategic Cost Management* (CAM-I Irwin-McGraw Hill, 1997) and *Hitting the Target: The CAM-I Target Costing Implementation Guide* (Novus Publishing, 2005), both by Shahid L. Ansari and Jan E. Bell and the CAM-I Target Costing Interest Group. Other CAM-I publications from the Interest Group include two reports available to members of CAM-I: *Addressing Commodity Price Volatility in Product Development Through a Mature Target Costing Process* and *Involving the Extended Value Chain in a Target Costing / Life Cycle Cost Process Model.*

For more information, go to ***http://www.cam-i.org/.***

The CAM-I Target Costing Best Practices Interest Group meets formally each quarter and informally between quarters. The next quarterly CAM-I meeting is Sept. 9-12 in St. Louis, MO.

In addition to members of the group, companies that participated in the work represented in this article include International Business Machines Corp., Regence, Shell Oil Co., Fairchild Semiconductor, Rockwell Collins, VEN International, and ON Semiconductor.

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PORTFOLIO STRATEGY
Volkswagen of America (VWoA) is working to improve the gas mileage of its gasoline-engined vehicles while also bringing hybrids and alternative propulsion—such as plug-in hybrid and battery electric vehicles—to market. The key, Michel said, is acceptance by a broad range of customers, so VWoA is focused on providing environmentally friendly vehicles that are also fun to drive. (Photos courtesy of VWoA.)

KEEPING THE PORTFOLIO PROFITABLE

For Volkswagen of America, it boils down to quality, balance, and branding

This Critical Thinking interview is with Rainer Michel, Vice President of Product Marketing and Strategy for Volkswagen of America.

Michel is responsible for ensuring that Volkswagen offers a competitive product lineup, working with his team to integrate the proper features and technology in existing and future Volkswagen products in the U.S. market. His team also listens to the voice of the U.S. customer and ensures that the proper requirements are taken into consideration during the development of VW products sold in the United States. In addition to product development activities, he manages the development of a balanced product portfolio strategy including power-train strategy, connectivity integration, e-Mobility solutions, as well as pricing strategy for Volkswagen's entire U.S. product portfolio.

Michel joined Volkswagen of America (VWoA) in January 2010. Previously, he served as Executive Director of Product Management for Global Small Cars at Volkswagen's global headquarters in Wolfsburg, Germany. Before joining Volkswagen, Michel held numerous positions of increasing importance in purchasing, engineering, product management, marketing, and planning for General Motors Europe and Opel. During his tenure at GM, Michel worked on various assignments for the U.S. market at the company's global headquarters in Detroit and technical center in Warren, MI.

Michel holds a master's degree in mechanical engineering from Darmstadt University in Germany.

Q. There are striking parallels between Volkswagen's development strategy and philosophy, and that of the U.S. Army's acquisition community. Both organizations set out to develop and deliver the right products, always looking for the next level of excellence in performance, technology, fit, and value, to

AT HOME WITH HERBIE
As it happens, Michel was born the same year as Herbie, the "Love Bug" made famous in Disney movies. Here, Michel relaxes with Herbie in Bad Camberg, Germany, Michel's hometown.

name some of the key parameters. How does your leadership philosophy sustain these principles?

A. Our leadership's philosophy is always to really strive for the very best. That, I believe, is the difference between us and other car companies: We don't compromise on product goals and targets. It's easier in some ways to have the best product—not just at the start of production but all the way through its life cycle—rather than trying to be tactical. In big organizations, especially, it is very difficult to keep the entire workforce moving to the same goals, so when you're striving for the very best, the risk of wrong interpretation and translation of those goals by different parties is much lower. It is important to stay ahead of the competition by setting ambitious goals. A good example of our mindset is that we always want to win comparative tests in the media, which means that everyone in the organization is always pushing to be the best so as to not endanger this goal.

Q. In line with how the Army approaches its Capability Portfolio Reviews for its tactical wheeled vehicles, network, and the like, can you tell us if Volkswagen has a similar approach and how it influences the future direction of the company?

A. We have defined the portfolio framework, dividing it into two groups. There are core models, which are the backbone of VWoA and which will ensure the major part of our volume growth. Beside these, we have the so-called ambassador models, which support the brand values. Both groups receive absolute priority when it comes to investment in product and marketing efforts.

All products must be in line with the VW performance characteristics—best-in-class driving dynamics, and so on—which are defined in relation to the competition. My team is continuously monitoring the market and investigating all business opportunities for the U.S. Any new product idea or successor model will have to support the brand values, and the market input into the development process must be in line with the defined VW product characteristics. The Golf R is a very good example of an ambassador product that demonstrates a lot of sportiness, is fun to drive, and has excellent driving dynamics.

We review our portfolio—including all new opportunities—twice a year with the VWoA executive team. This makes the most sense to us, because the required market research data is available in the same sequence.

Q. How does Volkswagen of America build and sustain a workforce that can carry out its strategy successfully on a day-to-day basis, yet remain flexible enough to react to customer demand? In other words, how does it manage its people portfolio?

A. You want to hire the best talent, and you want to expose that talent to all sources of information. In addition, as discussed before, you want to give strict and non-interpretable goals to that workforce. We encourage our people to have close relationships with our partners—for instance, companies such as Bosch and Continental—to have enough time to continuously drive all of our products, and to benchmark our cars and processes against those of our competitors. Product is king. We make it a point of personal honor to strive for the best solutions and not pursue suboptimal concepts.

Q. What defines an appropriately broad and balanced vehicle portfolio for Volkswagen to manage against? How do you identify and distinguish the diverse types of cars that you want to produce, while preserving choice and allowing an appropriate degree of redundancy between cars?

A. A balanced portfolio for VW means that we need core models that create

IF YOU GIVE YOUR EMPLOYEES AND YOUR PARTNERS A CHANCE TO WORK TOGETHER EARLY IN THE VEHICLE DEVELOPMENT PROCESS, THEN YOU WILL BE ABLE TO LEVERAGE THOSE RELATIONSHIPS BY GETTING EARLY ACCESS TO INNOVATIONS. IT'S KEY THAT YOU MUST BE A RELIABLE PARTNER SO THAT VENDORS ARE REALLY WILLING TO DISCLOSE THEIR BEST INSIGHTS TO YOU.

the necessary volume, combined with highly emotional products that support our brand positioning, with autobahn-inspired performance and exhilarating everyday driving. All of the products must be of the highest quality and provide lasting value, with sophisticated German engineering. We believe in and live our slogan, "Everyone deserves a better car." Volkswagen of America's portfolio has developed in recent years from individual niche products to a full-line offering. We continuously monitor our target customers and align our product offerings on a continuous basis.

When it comes to redundancies between cars, we look at it slightly differently: Looking at the human-machine interface, we want a common set of components so that a VW Brand customer who is moving between products according to their changing needs and life stages knows they are in a VW. We can differentiate models in many different ways, from their driving dynamics to their styling, but we want to spread components across as many vehicles as we can, as long as the specific segment requirements are met. Between VW Group brands, we share respective components that are not brand-specific, in that they're non-visible/-perceivable for the customer and are independent from the respective Brand DNA. Does it matter to the customer if an air-conditioning unit behind the instrument panel surface is the same on a Golf as on a Passat, as long as they work perfectly?

Q. The Army, which builds its portfolios based on needed capabilities, must consider technological obsolescence when making portfolio decisions. For Volkswagen, the guiding principle ultimately must be return on investment, but the obsolescence factor also plays a role in Volkswagen's portfolio decisions. How far ahead of production can Volkswagen safely identify a new product or feature, e.g., a radio, and make a portfolio decision?

A. Return on investment is certainly a very important Key Performance Indicator, but if market conditions change—for example, during the financial crisis of 2008—then the company's leadership has to take decisive action. Normally we are striving for a six-to-seven-year life cycle, which is in tune with the aging curve of our products and the ability of the organization to keep the product fresh with mid-life-cycle measures. The ability to predict what is needed not only for launch but also for the whole length of the life cycle must be considered a core strength of an organization's design, product planning, and engineering capabilities.

You have to continuously fill the product shelf with innovative features and cool and appealing product ideas. Because the Group is so big, it enables us to fill more niches and provide new features more quickly than other competitors. Based on the timing of the development process, we are forced to plan several years ahead and cannot react immediately, although development times have been significantly reduced in the past decade by the intensive use of simulation software. However, our competitors are also using the same techniques, so it is difficult to gain an advantage here. One advantage VW certainly has is its timeless and classy design language and high-quality design execution. As a result, VW models that are no longer in production still look fresh and appealing on the street, even if their technology and performance might not be up-to-the-minute.

Q. Volkswagen's modular tool kit strategy allows the use of common core design and common engineering for the major component systems in your subcompact, compact, and medium models around the world, while accommodating multiple variations at minimal additional cost.

Could you elaborate on how this strategy will create efficiencies in your vehicle engineering and production?

A. The more you can use the same parts across multiple vehicles, the fewer engineering hours need to be expended on all those vehicles, the less testing and validation needs to be done, and the less expensive the hardware you have to build. You will want to reinvest some of those savings to insulate yourself to any quality risk when rolling out in bigger volumes around the globe.

With this, you will achieve a higher level of quality from the beginning. In addition, all the knowledge you gained from the very first model launch can be applied to the following model, leading to launches that will be much faster and flawless. Faster launches with fewer interruptions mean more volume arriving faster at the dealers and in customers' hands, thus generating the required profits sooner.

Common parts also mean less tooling variance and more commonality across factories around the world. Besides the regular scale effects, a vendor's tooling can be simply copied, instead of designing and building a new tool for a different part. This is significantly cheaper and faster.

We call the component set our MQB—Modularer Querbaukasten, German for modular transverse matrix. It enables not just the usage of common parts across different segments, but also VW's modular production system, which leads to factories with the highest level of commonality and flexibility.

In future, all factories around the globe will be almost the same. Again, this saves cost, ensures top quality, and makes us very fast in reacting to changing market demands.

All this allows VW and the VW Group to invest in niche models alongside the core vehicles and to tailor the vehicles to what each market needs. The new Passat, with its specific dimensions such as a unique wheelbase for the U.S., is certainly a very good example of a product that's tailored to the market.

Q. Volkswagen has a global reputation for engineering leadership and views engineering excellence as a capstone of its success. How, specifically, do you identify areas for innovation?

A. Most importantly, we brainstorm with our staff at every level and in every area of the company in order to improve our products and the driving experience for our customers. We conduct a large number of drives with the Board of Management in both the Southern and Northern Hemispheres, as well as in all markets in all stages of the development. New innovations will be reviewed, tested, and discussed very early. Continuous benchmarking is an important tool as well.

Here in the U.S., we have established the Electronics Research Laboratory in San Francisco, which focuses on identifying and evaluating innovations for all our brands. Besides internal research, we continuously work closely with our vendors as a secondary source of innovation. It's important to have a close relationship, because they bear expertise in areas that we do not consider our core business. They can give you insights to innovations that may be happening outside your organization. If you give your employees and your partners a chance to work together early in the vehicle development process, then you will be able to leverage those relationships by getting early access to innovations. It's key that you must be a reliable partner so that vendors are really willing to disclose their best insights to you.

Q. Sales figures are, of course, an important measure of Volkswagen's success, but by no means the only one. What are your top three to five metrics for measuring performance in the marketplace?

A. Our Mach 18 strategy states that Volkswagen wants to be: a top employer; the most environmentally responsible automaker; the leader in quality and customer satisfaction; and we want to have the highest returns for a volume automaker. Yes, we are also aiming to produce more than 10 million vehicles a year by 2018. But volume alone isn't the only measure of a company's true success. We like to think of VW as a volume brand with a premium touch and want to achieve significant market share in all the main markets. In the U.S., that means having five or six cars on the street among every 100 new ones in order to be relevant and visible.

It is clear to us that truly credible global leadership cannot be achieved without being successful in all major markets, even if it looks possible from a pure sales volume point of view. Success is especially important in the U.S., where vehicle mass production was invented by Henry Ford and where VW has underperformed over the years; everyone in top management here and in Germany is very eager to succeed.

Q. The Army has put a great deal of effort into incorporating Soldiers' feedback into the design of their equipment, early and often in the development process. Like Volkswagen customers, Soldiers know what will work and won't work on the battlefield. How does Volkswagen connect with the public and encourage customer input? What methods have proven most productive for the company?

A. We interact with our customers on many levels. We do market research and

SUSTAINABLE MANUFACTURING
The VWoA factory in Chattanooga, TN, which produced its first customer car in April 2011, is an example of the company's sustainability strategy, which also encompasses VW products, green energy supply, and environmental initiatives, among other elements. The Chattanooga plant is the only auto factory in the world that has LEED Platinum certification from the U.S. Green Building Council's Leadership in Energy and Environmental Design program, Michel noted.

run intensive clinics where customers critique future products. We get feedback from auto shows and in the growing social media space; we have more than a million fans on Facebook, so we get feedback there, too.

Importantly, we cooperate closely with our dealers here in the U.S. and have installed a rotating Dealer Product Committee consisting of 10 dealers from all over the country at any one time. This committee provides very valuable feedback from the showrooms, which we include in our product strategy. And we think that our 500,000-plus employees are, to use an analogy to the Army, our troops, who are super-critical of what we do, so we survey their reactions and ideas. Besides the important information we can gather, being inclusive with the workforce has a significant motivational factor. So this is a clear win-win.

When it comes to quality, we closely cooperate with JD Power and Associates, and we look critically at feedback from the media, especially the key influencers such as *Consumer Reports* and *Edmunds.com,* and the enthusiast media such as *Motor Trend* and *Car and Driver*.

Q. Environmental standards are an important consideration for any automaker and are increasingly important to consumers as well as regulators. Volkswagen's Think Blue® philosophy is one example of how Volkswagen has responded to both communities. The TDI Clean Diesel Passat is another. How does Volkswagen keep up with the demand for cleaner products and more sustainable operations?

A. Clean Diesel is an important and unique selling point in the U.S. for VW, and we will continue to increase its share and roll out the technology to more products in the portfolio. But at the same time, we are working intensively to improve the gas mileage of our gasoline-engined vehicles and on bringing hybrids and alternative propulsion—such as plug-in hybrid and battery electric vehicles—to market.

The key to us is acceptance by a broad range of customers. Therefore you will always find the combination of environmentally friendly but at the same time fun-to-drive vehicles. Perhaps the best example is the New Generation Beetle Coupe with the TDI engine, which will be introduced in the market this summer. The TDI engine's great torque characteristics combine with this highly emotional product to let you enjoy driving while saving fuel.

When it comes to manufacturing, we are moving forward in a sustainable manner, exemplified by our brand-new, state-of-the-art factory in Chattanooga, TN: This is the only auto factory in the world that has LEED Platinum certification from the U.S. Green Building Council. Besides our products and their production, our Think Blue philosophy also encompasses: green energy supply, such as solar power and wind energy; environmental initiatives such as helping to preserve wolf habitats; and encouraging bicycle use with initiatives like Bikes Belong.

Q. Volkswagen aims to be the leading automaker by 2018. For 2011, the company was No. 2, behind General Motors. As someone who has worked for GM and now is a member of the Volkswagen leadership, what do you think is going to move Volkswagen ahead of GM?

A. We have a leadership that is heavily engaged in vehicle development and believes in striving to create and produce the best cars, with no compromise when it comes to product excellence, profitability, and quality. The VW Group is also unique in that it has a portfolio of brands that spans the demands of customers in all markets and all segments of those markets: We are the only manufacturer that has sustained success with multiple brands, all the way from Skoda up to super-luxury brands like Bentley and Bugatti.

In times when the world economy was in trouble and everyone was cutting costs, VW's size and profitability allowed it to keep on track with its R&D. All the fruits of this thinking have yet to be seen, although the new modular tool-kit strategy is an example: While others have platforms, we are already at the next level. ?


WERNER
FRONT

COVERING *the* FIELD

Lean Six Sigma Project reaches across organizations for more efficient system support

by Jeff Wykosky and Brandon Pollachek

The daunting task of stopping insurgents in Iraq and Afghanistan from using their number one killing option, radio-controlled improvised explosive devices (IEDs), was a major focus for the Army as it quickly developed numerous Counter Radio Controlled IED Electronic Warfare (CREW) jammers to smother the threat.

After meeting the initial challenge of delivering systems into Iraq and Afghanistan, it became apparent that a number of efficiencies could be implemented to create greater continuity while saving money. That is where the Lean Six Sigma (LSS) project for CREW Multifunctional Direct Theater Support Personnel came into play, spearheaded by Clarissa Lane, Chief, Readiness Management Division for Project Manager (PM) Electronic Warfare within Program Executive Office Intelligence, Electronic Warfare, and Sensors (PEO IEW&S).

Two years ago, there were multiple versions of jammers used in theater; each came with its own set of field support representatives (FSRs), who handle installation, setup, and maintenance of the systems. At the time, there were more than 180 FSRs for the multiple variations of jammers, with additional Operational Needs Statements requesting more systems as the surge in Afghanistan moved into full swing.

"Several original equipment manufacturers (OEMs) support the CREW Program, as there are mounted, dismounted, and fixed-site variants of the CREW system," said Lane. "Each OEM provides a contractor logistics support package. This typically includes FSR support, and usually that

MULTIPLE ROLES FOR FSRS

Using a Lean Six Sigma approach, the Army is saving more than $10 million by training field support representatives (FSRs) to cover both the Counter Radio Controlled IED Electronic Warfare (CREW) family of systems and gunshot detection systems, which provide protection for mounted and dismounted Soldiers. Here, FSRs at CREW University train on proper techniques for installing CREW systems on a vehicle. (Photo by Jill Kanuchok.)

FSRS FOR IED JAMMERS ARE NOW TRAINED ON ALL VARIANTS OF THE CREW SYSTEM, WHICH GREATLY REDUCED THE NUMBER OF PERSONNEL NEEDED TO ENSURE PROTECTION AGAINST RADIO-CONTROLLED IEDS.

FSR comes at a higher rate because he or she is considered a subject-matter expert."

SHARING PERSONNEL

To meet the increased demand for support efficiently, Lane was directed to develop an LSS project for CREW support.

LSS combines the principles of Lean (reducing and eliminating non-value-added activities) with Six Sigma (reducing variation and increasing quality) to improve process effectiveness and efficiency. The principal process whereby LSS is applied in Army projects is known as Define-Measure-Analyze-Improve-Control, a structured problem-solving approach for a team to define a problem logically; develop and implement solutions linked to underlying causes; and establish control measures to make sure the solutions stay in place.

"This project was twofold. Our first goal involved transitioning CREW FSRs from stovepiped, product-focused OEM support to a mix of organic and contractor capability-focused support," Lane said. "Our second goal involved collaborating across PEO IEW&S and cross-sharing with Product Manager Forward Looking Infrared [PM FLIR]."

CROSS-TRAINING BENEFITS

FSRs for IED jammers are now trained on all variants of the CREW system, which greatly reduced the number of personnel needed to ensure protection against radio-controlled IEDs. As an added bonus, PM FLIR reached out to the CREW office to ask that CREW FSRs also be trained to maintain gunshot detection systems.

The Individual Gunshot Detector is a passive acoustic system that uses a bullet's shockwave and muzzle blast to determine the relative position of the shooter. Previously, the Gunshot Detector FSRs were located only at major hubs in Afghanistan; they had to be set up as fly-away teams that visited smaller forward operating bases (FOBs) and contingency operating bases throughout the area of operation to perform maintenance on systems.

"Prior to teaming with CREW, PM FLIR used a fly-away team support concept for gunshot detection. As we all know, travel throughout Afghanistan is a challenge.

TARGETING IEDS

At one point, there were more than 180 FSRs for the multiple variations of CREW jammers in theater, a high priority for U.S. Armed Forces given the lethality of the threat. Here, PFC Shane Martin, a Soldier assigned to 2nd Battalion, 2nd Infantry Regiment, 3rd Brigade Combat Team, 1st Infantry Division, Task Force Duke pulls security around an IED found in Jamal, Afghanistan, June 29, 2011. (U.S. Army photo by SSG Andrew Guffey, 210th Mobile Public Affairs Detachment (MPAD).)

If you had a gunshot detection issue at a FOB, FSRs were required to travel to the system location, repair the system, and return to their point of origin," Lane said.

"CREW is supported out of five Regional Support Centers [RSCs] and 26 FOBs," she said. "Instead of the fly-away team wasting four to six days in non-value-added time traveling to repair the system, a reduced number of FSRs are now co-located at the CREW RSCs and FOBs. Additionally, FLIR has increased support, because the CREW FSRs can also support gunshot detection," she said.

Before leaving FOBs on missions, FSRs are able to ensure that CREW and Gunshot Detector systems are loaded and operating properly. The FSRs rely on training that they receive on CREW systems at the CREW University at Aberdeen Proving Ground, MD, and on the Gunshot Detector systems at Fort Bragg, NC.

CONCLUSION

"Teaming with CREW was the absolute right thing to do, as our FSR missions are platform-centric and very similar," said LTC William "Matt" Russell, PM FLIR. "This teaming was a no-brainer due to the efficiencies that would be gained, funding saved, and support increased across my portfolio if I teamed with CREW. FLIR and CREW are continuing this effort and branching it out to other program efforts, as this is a win-win for Soldiers, both programs, and our taxpayers."

The LSS project is estimated to save approximately $10.8 million. "By working within my Product Office alone, [Lane] has saved millions while maintaining the same level of support our Soldiers in harm's way need. Clarissa has been able cross-train organic field service representatives supporting five separate products to all work together," noted LTC Bruce Ryba, Product Manager CREW. "Then you look across the other product offices and other program executive offices, and there is millions more of savings she has provided. The efficiencies gained through this project are exactly what our Soldiers and our taxpayers need," he said.

Lane suggested that this model can be used throughout the PEO and within other organizations, starting first with in-house solutions. "We are optimizing FSR support across PM Electronic Warfare by cross-leveraging FSRs to support Quick Reaction Capability programs for PM CREW, PD [Product Director] Raven Fire, and PM Prophet," Lane said. "We are multifunctional within our O-6-level Electronic Warfare office as well as supporting PM FLIR. We are fully optimizing our FSRs and theater infrastructure, and there is potential for other O-6 PMs to take a similar approach to reduce field support costs."

LEVERAGING EXPERTISE

Program Executive Office Intelligence, Electronic Warfare, and Sensors is optimizing FSR support across Project Manager Electronic Warfare by cross-leveraging FSRs to support Quick Reaction Capability programs for Product Manager (PM) CREW, Product Director Raven Fire, and PM Prophet. Here, Soldiers assigned to 201st Battlefield Surveillance Brigade train on the latest version of the Prophet system, used by military intelligence Soldiers to collect enemy communication signals that can be analyzed for use by unit commanders, March 20 at Joint Base Lewis-McChord, WA. (U.S. Army photo by SGT Mark Miranda, 5th MPAD.)

For more information on Army LSS and other Continuous Process Improvement efforts, go to ***http://www.armyobt.army.mil/cpi-kc-approach-army.html*** .

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A HUB *for* LESSONS LEARNED

AMSAA establishes a place to collect successes, analyze failures, and share best practices from acquisition programs

by Alex Karahalis, James "Chip" Herrell, and John G. Thomas

Many different entities across the Army have acquisition-like lessons learned, but the lack of a central entity specifically for the Army materiel acquisition enterprise leaves the acquisition workforce with no realistic way to track successes, analyze failures, and develop best practices and lessons learned from past programs.

The Final Report of the 2010 Army Acquisition Review, *Army Strong: Equipped, Trained and Ready* (online at **http://usarmy.vo.llnwd.net/e2/c/downloads/213465.pdf**), reviewed seven key areas of the Army enterprise and provided recommendations for improvement. One such area concerned acquisition program lessons learned.

The review stated, "There is no database to guide one to appropriate programs, issues, trends, solutions and successes in acquisition programs." It highlighted the need to facilitate understanding and provide the basis for making improvements. Many companies in private industry have developed knowledge management (KM) programs to collect corporate wisdom, thus preventing "brain drain" and enhancing effectiveness through collaboration. The value of KM is reduced when no analysis is done on the data collected. A successful KM program must show the user immediate value and encourage collaboration.

The Center for Army Lessons Learned (CALL) is a widely used platform, mainly for operation-specific issues. CALL has done an excellent job in its mission to "facilitate rapid adaptation initiatives and conduct focused knowledge sharing." A similar entity could work toward accomplishing the same goal for the Army materiel acquisition enterprise. On Jan. 8, the Army Acquisition Executive (AAE), in response to the Army Acquisition Review's recommendation, signed a memorandum directing the Army Materiel Systems Analysis Activity (AMSAA) to "create a web-enabled database for Acquisition Lessons Learned and provide analytical capability to conduct the analysis." The memo tasked program, project, and product managers (PMs) of all Acquisition Category programs to conduct an after-action review (AAR) after all milestone events and program terminations, and to submit these lessons through the website, to share them with the acquisition community.

CONCEPT FOR NEW CENTER

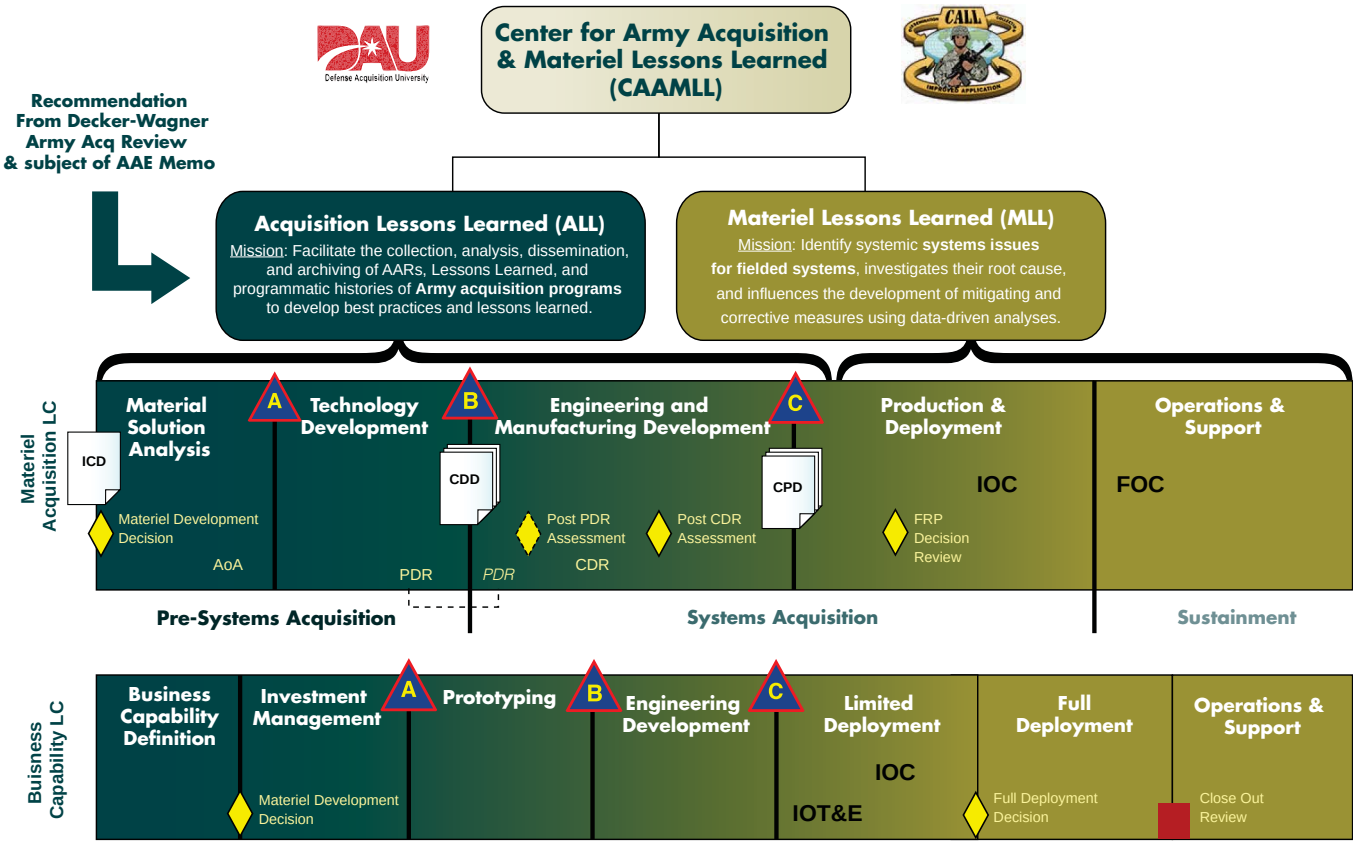
In response to the AAE's directive, AMSAA immediately initiated an effort to establish a Center for Army Acquisition Lessons Learned. As AMSAA conducted mission analysis of the AAE's directive, the results suggested that leveraging existing capabilities would minimize development time, and that the capability must capture and assess lessons across the entire materiel life cycle.

A decision was made to leverage, as much as possible, the current AMSAA Materiel Lessons Learned Analysis capability. The result is a Center for Army Acquisition and Materiel Lessons Learned (CAAMLL).

Figure 1 depicts CAAMLL's relationship to the DoD Acquisition Life Cycle model and highlights the fact that CAAMLL allows lessons to be captured, synchronized, and shared across the

Lessons Learned

Figure 1



The Center for Army Acquisition and Materiel Lessons Learned (CAAMLL) allows lessons to be captured, synchronized, and shared across the entire acquisition life cycle. The Lessons Learned portion facilitates the collection, archiving, and dissemination of lessons from after-action reviews (AARs) and programmatic histories, providing a formal capacity to analyze these inputs. (SOURCE: Army Materiel Systems Analysis Activity (AMSAA).)

entire life cycle. The Acquisition Lessons Learned portion of CAAMLL aims to facilitate the collection, archiving, and dissemination of lessons from AARs and programmatic histories of Army acquisition programs, and to provide a formal means and capacity to analyze these inputs. This will enable development of future lessons learned and best practices to train and support the Army materiel acquisition enterprise. This new AMSAA mission will be synchronized with AMSAA's ongoing initiatives to conduct acquisition program risk assessments for materiel system acquisition studies.

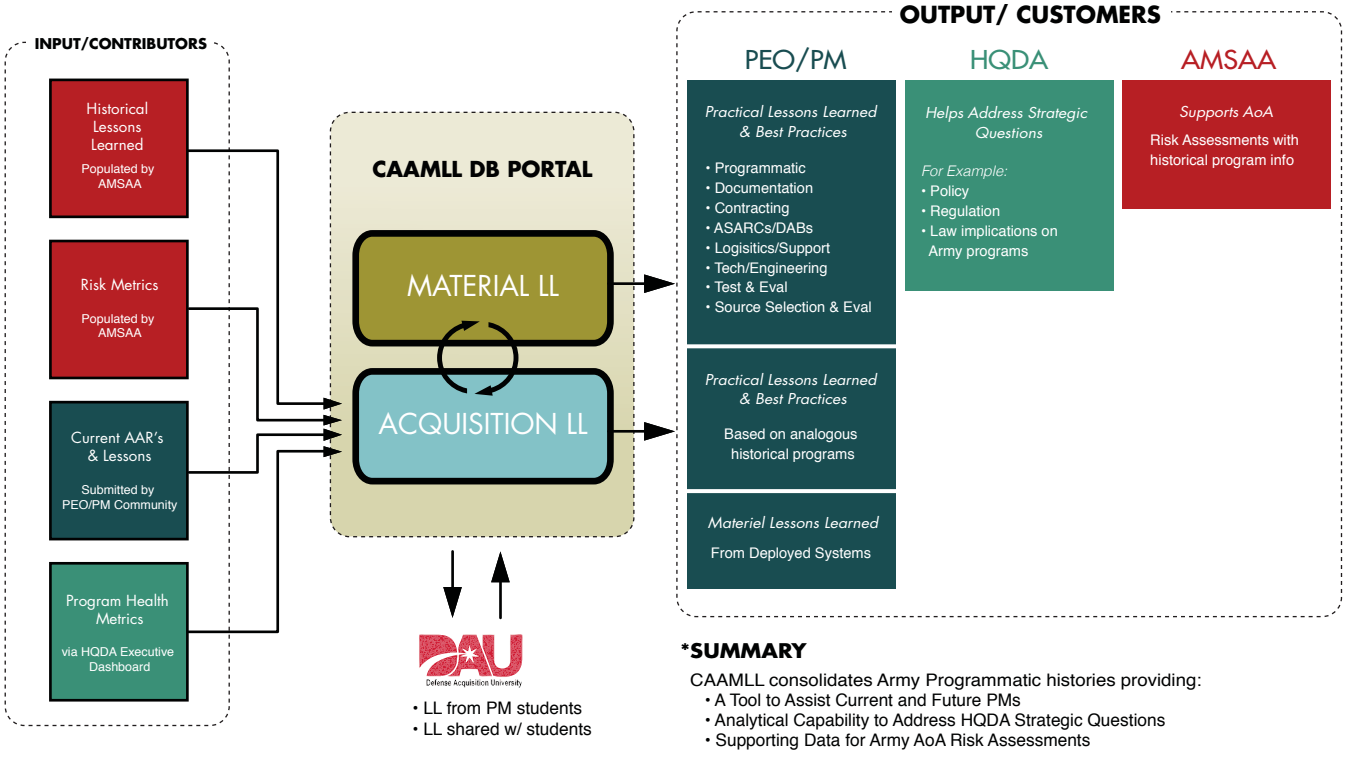
LEVERAGING EXISTING CAPABILITIES

As AMSAA's mission analysis indicated, standing up CAAMLL from scratch would be a substantial undertaking. Hence, AMSAA decided to leverage its Materiel Lessons Learned Analysis, now called more simply Materiel Lessons Learned (MLL), to ease the development of CAAMLL and contribute to the overall mission of Acquisition Lessons Learned.

The current MLL program identifies potentially systemic materiel issues on currently fielded systems and aims for the mitigation or improvement of identified problems by reporting the findings of AMSAA examinations and analyses directly to the owning system manager. To follow up, MLL gathers feedback on the outcome of the problem and then archives the information for future use.

CAAMLL FLOW

Figure 2



CAAMLL mines various sources of information such as the U.S. Government Accountability Office, Director, Operational Test and Evaluation, and Selected Acquisition Reports. The resulting historical lessons learned, best practices, and risk metrics allow everyone to make better acquisition decisions. (SOURCE: AMSAA.)

THE PRIMARY CUSTOMERS OF CAAMLL'S ACQUISITION LESSONS LEARNED CAPABILITY WILL BE THE PM COMMUNITY, HQDA, AMSAA, AND THE DEFENSE ACQUISITION UNIVERSITY. AMSAA INTENDS TO USE DAU AS A FEEDBACK MECHANISM TO REFINE LESSONS LEARNED AND BEST PRACTICES FOR CAAMLL.

The utility of MLL and its potential contributions to Acquisition Lessons Learned are still emerging, based on requirements and feedback from program executive officers (PEOs) and PMs. However, it is clear that through the MLL program, AMSAA can analyze immense volumes of usage and maintenance data that can reveal information such as reliability metrics, maintainability metrics, system aging effects, life-cycle costs, and many other factors that then can be compared to early program decisions and trades. This capability could yield a wealth of useful knowledge and lessons to be applied to future acquisition programs.

There are a multitude of challenges in integrating this capability with CAAMLL, but there is also the potential for numerous opportunities to benefit the PM community through insight into historical acquisition strategy decisions.

POPULATING THE LESSONS LEARNED DATABASE

Historical lessons learned, risk metrics, AAR lessons, and program health metrics are the basic Acquisition Lessons Learned inputs to CAAMLL (see Figure 2). Mining various sources of information such as the U.S. Government Accountability Office, Director, Operational Test and Evaluation, and Selected Acquisition Reports, among other sources, will allow AMSAA to populate CAAMLL with historical lessons learned, best practices, and risk metrics. In addition, AARs and future lessons learned will be populated with the assistance of the PM community. Program health metrics will be pulled directly from the HQDA Executive Dashboard.

The primary customers of CAAMLL's Acquisition Lessons Learned capability will be the PM community, HQDA, AMSAA and the Defense Acquisition University (DAU). AMSAA intends to use DAU as a feedback mechanism to refine lessons learned and best practices for CAAMLL

In summary, CAAMLL will consolidate Army program histories, thus providing the following capabilities:

- A tool to assist current and future PMs by leveraging historical and current acquisition lessons and best practices.
- An analytic capability to address HQDA strategic questions.
- Information to support Analysis of Alternatives risk assessments.

DEVELOPMENT STRATEGY

AMSAA is taking a three-phase development approach (see Figure 3 on page 96).

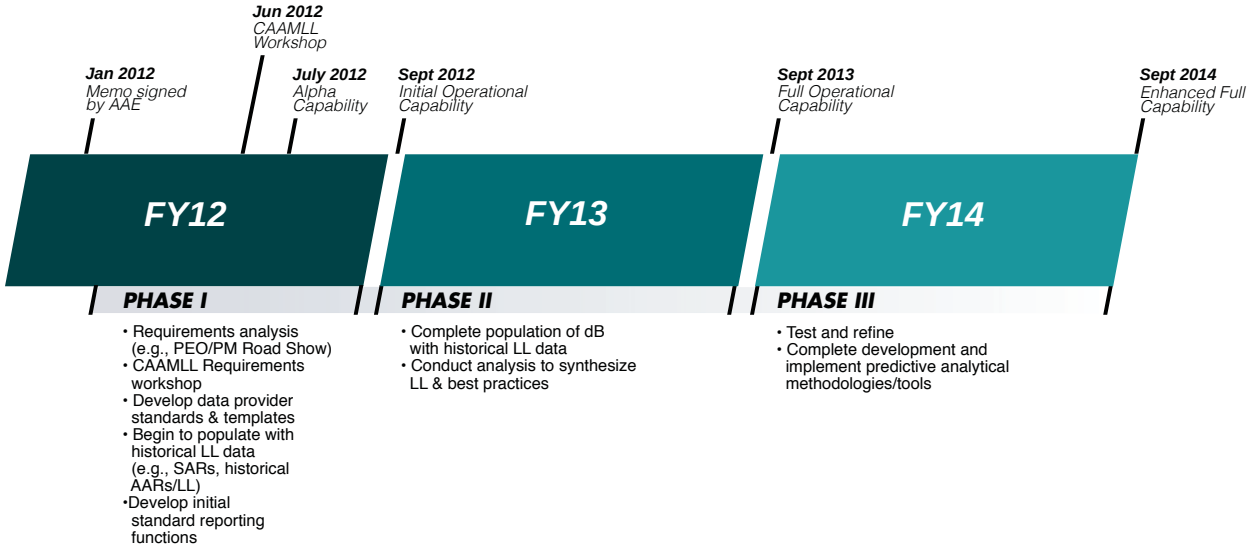
Phase I entails conducting a CAAMLL requirements analysis. A CAAMLL road show is underway to help capture requirements from PEO, PMs, and acquisition enterprise stakeholders. In addition, CAAMLL had a requirements workshop in June, after which AMSAA began populating CAAMLL with historical lessons learned information.

Deployment of an initial CAAMLL capability is scheduled for September 2012, with an alpha capability available in July 2012. The alpha capability will consist of a web-based portal where authorized users can upload and access AAR lessons. The initial operating capability will also include a preliminary population of searchable historical lessons learned, best practices, and risk metrics.

Phase II will entail the final population of the database with historical lessons learned, an extensive analysis to synthesize lessons learned and best practices, and refinement of the portal itself. Phase II will result in a full operational capability no later than September 2013.

CAAMLL Timeline

Figure 3



AMSAA is taking a three-phased development approach, starting with a CAAMLL requirements analysis and culminating in the availability of predictive analytical methodologies and tools by September 2014. (SOURCE: AMSAA.)

Phase III will provide predictive analytical methodologies and tools by September 2014.

CAAMLL CHALLENGES

The CAAMLL team foresees some challenges and barriers to its adoption and use by acquisition professionals. To help address some of these concerns, a CAAMLL milBook page is now available to collect ideas and so facilitate communication of needs, wants, and desires within the Army acquisition community.

Along with the road show, gathering this type of feedback is essential to achieve an interactive, collaborative partnership between CAAMLL and the PM community.

The team also is planning to start a forum similar to the Army Professional Forums so that members can post issues and have them resolved by community members or acquisition functional area subject-matter experts.

This idea was based on feedback from PEOs and PMs to date. Experts from the United States Military Academy Department of Systems Engineering, Johns Hopkins University Applied Physics Laboratory, and RAND Corp. are collaborating with the team.

CONCLUSION

The CAAMLL strategy is structured to provide acquisition professionals a first stop for support, ideas, and analysis as well as a tool for collaboration, and so to foster a more efficient and innovative materiel acquisition enterprise.

For more information about CAAMLL, go to ***https://www.milsuite.mil/book/groups/caamll.***

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SYSTEM OF SYSTEMS INTEGRATION DIRECTORATE

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> ***Leads*** **Capability Set Management Synchronized Fielding efforts**

> ***Serves*** **as a key acquisition team manager supporting the Army's Agile Process**

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PREPARING TO FIRE
Soldiers prepare to drop the XM395 Accelerated Precision Mortar Initiative (APMI) round down the 120mm mortar tube in Rhamen Kheyl, Afghanistan, Sept. 29, 2011. (Photo by SGT Michael Okey, 1st Battalion, 279th Infantry Regiment.)

DOTmLPF + dotMlpf = DOTMLPF

ATEC, TRADOC join forces, perspectives, and expertise for an unusual combined in-theater assessment

by MAJ Marcus Grimes, Paul Wallace, Chris Warshawsky, and James Breeze

When you boil it down, the purpose of the Army acquisition community, and really the entire Institutional Army, is to make the Operational Army better. Isn't that what our goal is every day—to bring a new materiel solution to the force that will help our Soldiers do their jobs better?

It was in that spirit that the U.S. Army Test and Evaluation Command (ATEC) and the Army Capabilities Integration Center and Maneuver Battle Lab of the U.S. Training and Doctrine Command (TRADOC) came together recently to conduct a combined, in-theater Forward Operational Assessment (FOA) of the Accelerated Precision Mortar Initiative (APMI). For two weeks in October 2011, elements from ATEC and TRADOC conducted the assessment in Afghanistan, using surveys and interviews of mortar crews, fire support teams, and unit leaders.

This particular combined Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, and Facilities (DOTMLPF) assessment is significant for three reasons: It is not done routinely, it leveraged the critical capabilities from an Army Command and an Army Direct Reporting Unit, and it was more efficient than separate assessments by individual organizations. This article deliberately stays away from the results of the combined APMI DOTMLPF assessment, instead focusing more on the background, the combined nature of the assessment, and its contribution to Army Acquisition. Other programs conceivably could benefit from similar combined assessments.

ASSESSMENT RESPONSIBILITIES

The APMI is the U.S. Army's first GPS-guided precision mortar. Pete Burke and Ted Hom introduced the system and the accelerated nature of the APMI acquisition in "Right on Target" (*Army AL&T* Magazine, October-December 2011).

In March 2010, during the early stages of the APMI program, the Army G-3/5/7 directed TRADOC to conduct an APMI capability assessment once it was fielded in theater. The Accelerated Capabilities Division (ACD) of the Army Capabilities Integration Center (ARCIC) contacted ATEC, and the two agreed to conduct a cooperative capability and operational assessment. ATEC's primary goal was to determine the capabilities

and limitations of this particular materiel solution, leading to recommendations to make the system better.

The ACD capability assessment had two primary purposes: first, to determine whether the capability was operationally relevant while providing supporting data to a Capabilities Development for Rapid Transition submission and/or development of a Joint Capabilities Integration Development System (JCIDS) document; and second, to provide data to update the initial capability concept of operation, enabling follow-on units to benefit from adjustments made by the first units receiving the system.

The Maneuver Battle Lab (MBL) joined the team at this point. MBL's goals were to observe the employment of APMI, compare it to other precision munitions, and use this information for an existing study on mortar employment. During the process, TRADOC pulled in other subject-matter experts from the Infantry Mortar Leader Course, the Soldier Requirements Division of the Maneuver Center of Excellence (MCoE), and the Fires Center of Excellence (FCoE) Directorate of Training and Doctrine to round out the team. One member from the Product Manager Guided Precision Munitions and Mortar Systems of Program Executive Office Ammunition (PEO Ammo) also embedded in the team as programmatic and technical liaison (see Figure 1).

METHODOLOGY

Working together, the commands identified data requirements to achieve the collective purpose. With these requirements identified, the commands developed a set of three surveys: one for the 11C indirect fire infantryman crew members, one for the fire support teams, and one for the leaders from the platoon through brigade combat team levels. The team leveraged the existing infrastructure with the ATEC FOA team and put into place a concept to conduct the assessment.

With the ATEC FOA team and an ARCIC liaison officer already in theater, the remainder of the assessment team deployed to Kandahar. There, the combined team split into four multifunctional teams with representation from the various elements and conducted data collection on Oct. 7-21, 2011, at 16 different forward operating bases and combat outpost locations across units in Regional Command (RC)-East and RC-South.

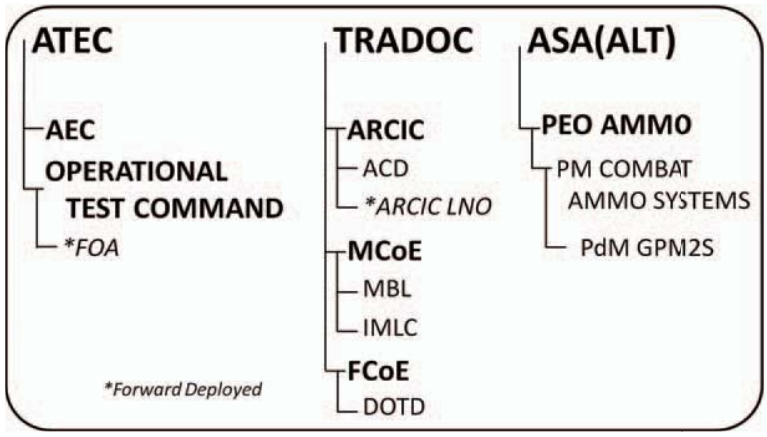
At the end of data collection, the team reunited in Kandahar, populated the database, cross-leveled information, and began formulating initial impressions and first reports.

As of this writing, the reports from this effort published so far, which can be requested from the respective organization, are:

- ARCIC *Initial Impressions Report*, Oct. 31, 2011.
- ATEC *Forward Operational Assessment Report*, Nov. 10, 2011.
- ARCIC *Initial Assessment Report*, Nov. 30, 2011.

APMI Forward Operational Graphic

Figure 1



Tasked to conduct a capability assessment of the Accelerated Precision Mortar Initiative once Program Executive Office Ammunition (PEO Ammo) had fielded the new munition in theater, the U.S. Army Training and Doctrine Command (TRADOC) contacted the U.S. Army Training and Evaluation Command (ATEC), and the two embarked on a cooperative forward operational assessment (FOA). Elements of both TRADOC and ATEC took part, and a representative of PEO Ammo's Product Manager Guided Precision Munitions and Mortar Systems (PM PGM2S) served as a programmatic and technical liaison. (SOURCE: MAJ Marcus Grimes, ATEC.)

- ATEC *Capabilities and Limitations Report (Update)*, Jan. 2, 2012.

The combined ARCIC and ATEC full DOTMLPF assessment report was approved by ARCIC and staffed to the Army G-3/5/7 on Feb. 6, 2012.

AN UNCOMMON APPROACH

While synergy between ATEC and TRADOC has grown through the years, this type of assessment is not habitual. Before the Materiel Development Decision and ATEC involvement, ARCIC normally performs a DOTMLPF assessment to determine whether a materiel solution is what the Army requires to fill a particular capability gap.

ARCIC focuses on the domains other than materiel. If it finds that a change in the other domains cannot fill the capability gap, ARCIC recommends that the Army develop a materiel solution and use this assessment to help write the requirements. Once these are written, ATEC tests and evaluates the item against its requirements. The testing and evaluation focus mainly on how well the item performs, which relates to the materiel domain. However, ATEC also partially evaluates how this item impacts the other domains of DOTMLPF. Rarely will ARCIC conduct an assessment during testing or after an item is fielded; hence the uniqueness of ARCIC and ATEC working together for this DOTMLPF assessment.

ATEC's contribution can be simplified by dotMlpf, and TRADOC's by DOTmLPF.

This combined assessment also leveraged critical capabilities from each of the participants. ATEC, the Army's independent test and evaluation agency, maintains the critical capability to conduct stateside and in-theater assessments. ARCIC's ACD enables development and deployment or employment of accelerated capabilities, both materiel and non-materiel, to the current force to address current critical operational needs.

INTRODUCING THE APMI

The APMI is the world's first GPS-guided mortar cartridge. With the fielding of APMI, maneuver battalions within U.S. Forces – Afghanistan infantry brigade combat teams have a precision organic indirect-fire capability providing lethal first-round effects on target to support combat operations in *Operation Enduring Freedom*. Here, New Equipment Team Trainer Louis Cote explains to Soldiers what they should check for after the canard cover is removed from the XM395 in Rhamen Kheyl, Afghanistan, Sept. 29, 2011. (Photo by Victor Vergara, Program Executive Office Ammunition.)

ACD integrates accelerated capability activities between proponent force modernization domains to ensure unity and priority of effort, and synchronization and optimization of resources. ACD co-leads the Capabilities Development for Rapid Transition process with G-3/5/7 to prioritize rapidly equipped systems in current operations so that they can become enduring capabilities.

MBL lends the critical capability to develop warfighting initiatives, identify experiments to determine the usefulness of developmental initiatives, and inform requirements for the acquisition process. MBL maintains the post-experiment analytic capability to report on the effectiveness and make a recommendation to discard, investigate further, or invest now to put that capability into Soldiers' hands. The Infantry Mortar Leader Course cadre from MCoE are the Army's subject-matter experts in mortar system training and operations. FCoE's Directorate of Training and Doctrine adds the critical capability of being the Army's expert on training for and executing a call for indirect fire.

Had ATEC and TRADOC not worked together on this assessment, each would have completed its own assessment. The result would have been duplication of effort and possibly conflicting information for decision makers. Both commands would have sent data collection teams to the units in theater, looking to interview the same set of Soldiers. The data collection would have disrupted the Soldiers and units twice, asking many of the same questions.

Without the combined subject-matter expertise and shared analysis, Army acquisition decision makers could have seen two divergent conclusions. At a time when efficiencies are increasingly important, one can see that this combined assessment reduced the required manpower, increased synergy between two commands to produce the most robust assessment possible, and, most important, reduced interruptions to the Soldiers and units engaged in the day-to-day fight.

CONCLUSION

In the end, acquisition decision makers will decide whether the combined assessment produced a superior look at the APMI, but from the participants' perspective, the whole was greater than the sum of the parts. Other instances of the two commands working together, including the Network Integration Evaluation, Army Expeditionary Warrior Experiment, and other FOA assessments have achieved similar efficiencies.

In the APMI case, decision makers now have a single, comprehensive document that not only outlines the potential of a single materiel solution, but also covers other important aspects of potential changes in doctrine, training, and leadership, and the impact each has in achieving the desired capability and closing the capability gap.

The APMI DOTMLPF assessment highlighted some unintended consequences and revealed other non-material areas of improvement that may not have been found with separate assessments, such as doctrine and training on how to employ mortars given precision munitions, and additional training emphasis on the five fundamentals of accurate indirect fire.

Our recommendation is that ARCIC and ATEC team up more often to complete DOTMLPF assessments, such as by building informal relationships at the action officer level and including ARCIC on the test and evaluation integrated product team. These are possible first steps that could lead to a better, more efficient acquisition system.

*For more information on ATEC, go to **http://www.atec.army.mil**. For more information on PEO Ammunition, go to **http://www.pica.army.mil/peoammo**.*

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JAMES BREEZE, a contractor for SAIC Inc., is a Project Officer on the Soldier Team at the Maneuver Battle Lab. He is Level I certified in test and evaluation.

PEO Ground Combat Systems

Shaping the Future Through Affordable Modernization of Ground Combat Systems

In alignment with the Army's Combat Vehicle Modernization Strategy PEO GCS is working to:

1. **Transform** capabilities by acquiring the Ground Combat Vehicle, robotics and unmanned ground systems
2. **Replace** the M113 FoV to increase force protection, mobility and network capabilities
3. **Improve** the Abrams tank, Stryker FoV, and Bradley FoV to increase space, weight and power, and enable integration of the emerging network

SHARING SERVICES, SAVING MONEY

By leveraging commonality of functions, PD TIS improves customer support and reduces costs

by Douglas Haskin

DoD personnel have made progress in a broad federal effort to identify and implement efficiencies, in fulfillment of a task to decrease costs while maintaining quality. The search for efficiencies necessarily focuses not only on acquisition, but also on sustainment costs. An example is an initiative within the Product Director Transportation Information Systems (PD TIS), part of Program Executive Office Enterprise Information Systems (PEO EIS). PD TIS projects savings to the program to total just over $4 million by the time all services are fully integrated in FY13.

PD TIS began designing Transportation Coordinators' Automated Information for Movements System II (TC-AIMS II) in the late 1990s based on new requirements to upgrade and replace the legacy system, Transportation Coordinator Automated Command and Control Information System. Deployed U.S. service members, DoD civilians, and contractors operate PD TIS systems to support *Operation Enduring Freedom*. Garrisons in CONUS and OCONUS use the systems to manage and plan unit movements.

From the start, PD TIS provided dedicated customer support via a fully staffed 24-7 Customer Service Center (CSC), with telephone and email support to TC-AIMS II users worldwide. PD TIS also invested significant resources in other stovepipe, dedicated resources for fielding and sustaining TC-AIMS II. The PD established a dedicated warehouse to receive, prepare, and ship equipment to end users, as well as unique processes for software replication, software distribution, and a trouble ticketing system to manage and resolve field incidents.

While these approaches were logical during the development and initial fielding of TC-AIMS II, program leadership began to focus on reducing the sustainment cost of the system as it approached full operational capability in 2011. A primary means of achieving this goal was to identify and implement shared services.

EVALUATING ALTERNATIVES

In late FY10, PD TIS began evaluating TC-AIMS II sustainment cost drivers, and leadership identified several possibilities for reducing costs. Some of the cost drivers required such a significant upfront investment that the return on investment was not favorable.

Ultimately, PD TIS selected several cost drivers for migration to shared services that required smaller upfront investments while offering potentially large savings in future years. The selected cost drivers were the CSC ticketing system; CSC Tier 1 support; collaboration tools; license management; system warehousing, preparation, and shipping; and software replication and distribution.

ULTIMATELY, PD TIS SELECTED SEVERAL COST DRIVERS FOR MIGRATION TO SHARED SERVICES THAT REQUIRED SMALLER UPFRONT INVESTMENTS WHILE OFFERING POTENTIALLY LARGE SAVINGS IN FUTURE YEARS.

SHARING SPACE TO SAVE MONEY

Product Director Transportation Information Systems (PD TIS) co-located its equipment with other systems at the Hardware/Software Integration Facility (HSIF) of Software Engineering Center – Lee (SEC-Lee) near Fort Lee, VA, achieving a significant cost savings for the Army. PD TIS selected SEC-Lee to provide warehousing of equipment, system preparation (software loading, packing, etc.), and shipping services. (Photo by Teresa Lee.)

TAPPING CUSTOMER SERVICES
PD TIS rescoped its Customer Service Center (CSC) mission to reduce manpower requirements while maintaining 24-7 support to the field, by collaborating with the Support and Operations Center (SOC) of Program Executive Office, Command, Control, and Communications – Tactical (PEO C3T) at Fort Hood, TX. The SOC now serves as the single point of entry for all trouble tickets related to the Transportation Coordinators' Automated Information for Movements System II. Here, Jeffrey Loyd, a Digital Systems Engineer, works at the SOC. (Photo by Dave Brackmann.)

PD TIS then began identifying viable alternatives. Some staff members previously had used the Single Interface to the Field (SIF: **https://sif.kc.us.army.mil;** log-in required), a product of Program Executive Office Command, Control, and Communications – Tactical (PEO C3T) that offers a variety of Web-based solutions. SIF, along with PEO C3T's Support and Operations Center (SOC) at Fort Hood, TX, became candidates for the evaluation.

Also selected was the Hardware/Software Integration Facility (HSIF) of Software Engineering Center – Lee (SEC-Lee) near Fort Lee, VA, as well as some offerings from PEO EIS. In addition, PD TIS collaborated with the U.S. Army Reserve Command (USARC) to consider using USARC's Standard Army Management Information Systems Computer Exchange as a warehousing and shipping alternative.

SHARED SERVICES

After evaluating various options using multiple criteria that included total cost, expected impact to the user community, quality of service, and scalability, PD TIS ultimately selected PEO C3T's SIF and SOC, as well as SEC-Lee's HSIF as replacements for the PD TIS dedicated services. The following services have been migrated to date:

- **CSC ticketing system**: PD TIS migrated to a Web-based system with improved capabilities, better accessibility, and lower cost. Previously, it had maintained the ticketing system in its contractor building. Sustainment costs included hardware and software maintenance, network connectivity, information assurance vulnerability corrections, and system administration.

  PEO C3T's SIF organization worked closely with PD TIS to migrate active tickets to the Incident Reporting Module (IRM); archive existing historical data; and incorporate the IRM into PD TIS business practices. The advantages of this migration have been lower sustainment costs and better customer access to the status of problem resolution, as well as commonality with other systems. Unit personnel are already familiar with the SIF for supporting command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems. Before the migration, the PD TIS system was usable only by internal staff; now the system is available to all PD TIS customers worldwide.

- **CSC Tier 1 support**: PD TIS rescoped its CSC mission to reduce manpower requirements driven by an operationally focused support posture, while still maintaining 24-7 support to the field. To do this, PD TIS collaborated with PEO C3T's SOC at Fort Hood, which provides 24-7 support to various C4ISR systems, primarily within PEO C3T. PD TIS has been successful in training the SOC personnel to perform Tier 1 tasks for TC-AIMS II that include, but are not limited

to: account creation, account changes, password resets, and software requests.

The SOC now serves as the single point of entry for all TC-AIMS II trouble tickets. PD TIS also scaled back its existing CSC to extended business hours—six 12-hour days, compared with seven 24-hour days.

At the same time, leadership identified PD TIS personnel for "on call" backup to the SOC for critical Tier 2 support during non-business hours. Migration to the SOC has reduced manpower costs for PD TIS and allowed for better visibility of issues that may affect multiple systems—for example, a widespread network outage.

- **Collaboration tools**: PD TIS attempted to stand up a viable collaboration site using Microsoft SharePoint on multiple occasions. In each of those instances, it was hindered by hardware, software, and hosting costs, plus a lack of staff expertise. The staff was already familiar with SharePoint, but not with SharePoint's initial setup or site administration. Instead, PD TIS began utilizing the SharePoint capability offered by PEO C3T's MilTech Solutions in early FY12 and has started using its workflow capabilities to improve accountability and review times for documents in staffing. Additionally, MilTech provides this service at a much lower cost than projected for previous efforts.

- **Software requests**: The SIF again was the choice for PD TIS to improve and automate. In the past, PD TIS staff had emailed, printed, faxed, and sometimes signed forms by hand to manually process various software requests. The SIF offered a solution that did more than automate a manual process; it improved the process and offered users the opportunity to download selected software instead of requesting physical media such as CDs or DVDs.

  Users are now able to use their Common Access Card (CAC) to log in to the SIF Software Ordering and Download tool, search for TC-AIMS II software, and immediately download certain unrestricted items such as reference data, or submit a request for permission to download or receive other software through the mail. This process has improved accountability, streamlined service to the customer, and reduced costs compared with the previous processes.

- **System warehousing, preparation, and shipping**: PD TIS selected SEC-Lee to provide warehousing of equipment, system preparation (software loading, packing, etc.), and shipping services. Before, it had maintained a dedicated warehouse in Springfield, VA. Now TC-AIMS II equipment shares space in SEC-Lee's HSIF with multiple other systems. The location is still close enough that PD TIS staff can visit at minimal travel cost,

SINGLE INTERFACE SOLUTIONS
PEO C3T's Single Interface to the Field (SIF) offers a variety of Web-based solutions. After evaluating various options using multiple criteria that included total cost, expected impact to the user community, quality of service, and scalability, PD TIS selected SIF, among other approaches, to replace PD TIS-dedicated services. The SIF also offered a solution that automated and improved a manual process.

but far enough away from the Washington, DC, metropolitan area to decrease warehouse rental costs significantly.

The various HSIF customers also share manpower and facility costs such as electricity and security. PD TIS personnel now have access to a Web-based inventory control system used by the HSIF which is a significant improvement over the previous process using a spreadsheet. Furthermore, the HSIF's shipping volume allows for lower shipping rates compared with the rates that PD TIS previously obtained.

- **Software replication and shipping**: PD TIS also chose the SEC-Lee HSIF to duplicate TC-AIMS II software for distribution and ship it to the end users. Previously, PD TIS had performed this task at its contractor facility.

  Due to the cyclical nature of major software releases, this often meant intensive operation of the DVD-burning equipment for a short period, followed by several months of nonuse. With such infrequent usage, operators had to learn the process again every time. The HSIF provides a higher-capacity machine that offers additional options such as laser etching instead of paper labels. By collaborating with SEC-Lee, PD TIS improved the quality of the product and reduced the costs to provide these services.

CONCLUSION

Overall, the shared services capabilities have enabled PD TIS to improve support to TC-AIMS II users, who generally are deploying or deployed Army units in support of Overseas Contingency Operations.

Expanding the accessibility to services has allowed, in most cases, any U.S. government civilian, military, or contractor CAC holder to gain access to the Web-based services. These same customers have also seen improvements in the form of a higher-quality product and faster turnaround for service requests.

These efforts have greatly helped achieve the strategic goal of consolidating support services and reducing sustainment costs. All of the migrations have affected virtually every TC-AIMS II stakeholder and have been transparent, producing overwhelmingly positive results.

As always, PD TIS remains committed to providing effective and timely support to our user community. While decreasing costs was an important objective, it could not come at the expense of support to the customer.

By working through existing shared resources, PD TIS has been able to reap the benefits of an "economies of scale" approach, while maintaining and improving the level of service expected by our customers.

For more information, go to ***http://www.tis.army.mil/****.*

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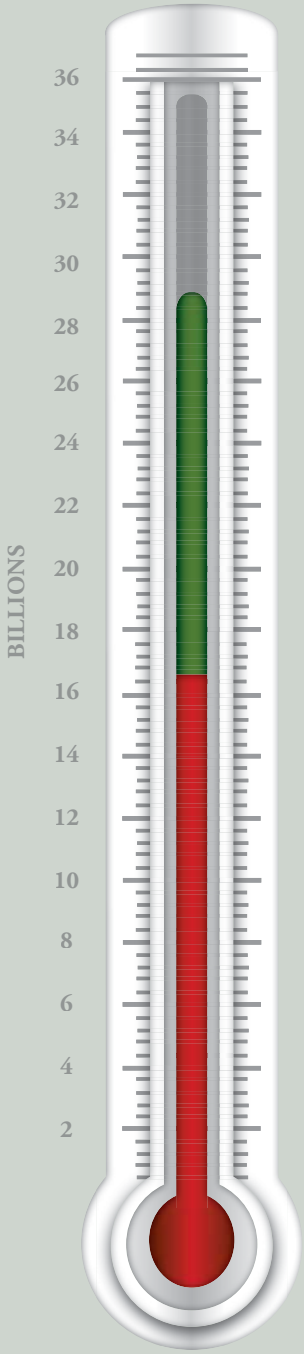
EXPANDING THE ACCESSIBILITY TO SERVICES HAS ALLOWED, IN MOST CASES, ANY U.S. GOVERNMENT CIVILIAN, MILITARY, OR CONTRACTOR CAC HOLDER TO GAIN ACCESS TO THE WEB-BASED SERVICES. THESE SAME CUSTOMERS HAVE ALSO SEEN IMPROVEMENTS.

COST SAVINGS
$12.2 BILLION

COST AVOIDANCE
$16.7 BILLION

CURRENT TOTAL
$28.9 BILLION



DOLLARS & SENSE

The Army continues to face tremendous demands to meet Soldiers' needs with reduced manpower, funding, and contractor support. To answer this challenge, the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT) is committed to identifying cost savings and avoidance in all areas of Army acquisition. Army AL&T *Magazine is tracking this effort.*

As of March 31, ASAALT organizations had completed 871 Continuous Performance Improvement (CPI) projects and achieved a cumulative $28.9 billion in efficiencies ($12.2 billion in cost savings and $16.7 billion in cost avoidance), realized in the period from FY07 to FY18. Some examples of successful CPI projects follow.

- ***Computer Hardware, Enterprise Software, and Solutions (CHESS) Waiver Process (Program Executive Office (PEO) Enterprise Information Systems)***—Improvements to the CHESS website make it easier for customers to navigate and find information on submitting hardware or software waiver requests. The project reduced inaccuracies and rework of waiver requests, eliminated non-value-added steps in the process, and improved standardization of steps. These improvements resulted in a validated $25.1 million cost avoidance from FY12 through FY18.

- ***Non-Destructive Test Equipment Incident Reporting System (Project Manager Soldier Protection and Individual Equipment, PEO Soldier)***—This improved process leverages Microsoft Corp. software to expedite the resolution of corrective actions for the Non-Destructive Test Equipment used to X-ray and automatically determine the serviceability of hard armor plates. Functional plates are returned to Soldiers and not removed from service, resulting in a validated cost avoidance of $76.3 million over seven years.

- ***Counter Radio Controlled Improvised Explosive Device Electronic Warfare (CREW) System FSRs cross-sharing (Project Manager Electronic Warfare, PEO Intelligence, Electronic Warfare, and Sensors)***—The project identified opportunities for cross-sharing field service representatives (FSRs) with other program management offices and decreased the quantity of original equipment manufacturer contractor FSRs for several CREW variants. The reductions in field support personnel, transportation delays, and repair time resulted in a validated financial benefit of $37.7 million ($27.2 million cost savings and $10.5 million cost avoidance) over four years. (See related article on Page 88.)

For more information on ASAALT efficiencies initiatives, contact Colleen Prasil in the Strategy and Improvement Directorate at ***colleen.f.prasil.civ@mail.mil****.*

COMMENTARY

FROM THE DIRECTOR,
ACQUISITION CAREER MANAGEMENT
LTG WILLIAM N. PHILLIPS

SAVING LIVES THROUGH ACQUISITION

Those of us who serve Soldiers in the acquisition community are consistently nourished by an abiding reverence for deployed forces who sacrifice and serve on the front lines of conflict.

I was inspired by a recent visit I had with some of our wounded warriors. It was an honor for MG Nick Justice [MG Nickolas G. Justice, Special Assistant to LTG Phillips] and me to recently welcome home 34 of our heroes, Wounded Warriors returning from duty in Afghanistan at Andrews Air Force Base, MD.

While meeting with these Americans, I was inspired by their service, touched by their sacrifice, and deeply moved by their resolve to both continue the mission and support their fellow deployed Soldiers and comrades in arms.

Meeting these returning service members reminded me of the important story of 1LT Jason Miller from Fairfax, VA, a Soldier whose life was saved when his Advanced Combat Helmet stopped multiple bullets shot at him by Taliban insurgents in Afghanistan. Upon being shot, Miller was somersaulted backward. Once down, he soon realized that he was OK, dusted himself off, grabbed his M4, stood up, and killed the two heavily armed enemy fighters. Jason Miller is alive today because the acquisition process works.

Most recently, LTG Bob Lennox [LTG Robert P. Lennox, Principal Deputy Director of Cost Assessment and Program Evaluation, Office of the Secretary of Defense] and I had the opportunity to pin Combat Action Badges on Soldiers in Kandahar, Afghanistan, some of whom had survived IED attacks. Their service remains inspirational!

HONORING SERVICE TO THE NATION

Instances such as these cause me to reflect with renewed vigor upon the particular technologies we provide that are designed

MISSION-CRITICAL EQUIPMENT

Many Soldiers' lives have been saved on the field of battle because of the successes of Army Acquisition. Here, a combined team of paratroopers with the 1st Brigade Combat Team (BCT) of the 82nd Airborne Division (AD) and Afghan police move toward a compound to search for a suspected weapons cache in the early morning of April 8 in southern Ghazni province, Afghanistan. (Photo by SGT Mike MacLeod, 1st BCT, 82nd AD.)

to enhance Soldier protection and, at times, save lives. It is through our mission to serve them that we can best honor the sacrifices that they and their families make for our Nation.

The story of Jason Miller is the reason we in the Army's acquisition community have worked to develop and field more than 1 million of the Advanced Combat Helmet (ACH), gear specially engineered with ballistic padding designed to reduce injuries to the neck and head area. Thanks to his heroism and the protective gear he wore, Jason Miller was promoted to the rank of Army Captain in July of last year.

All of the gear, technologies, services, and support we provide to Soldiers are of vital importance to the mission. Many of us in the Army acquisition community reserve a special place in our hearts for those particular technologies designed to keep Soldiers safer in battle. These life-saving items include innovations such as the Stryker Double-V Hull (DVH), Mine Resistant Ambush Protected Vehicles, and key individual items of protection for dismounted Soldiers and small, tactical units-on-the-move, such as the ACH, body armor, pelvic protection gear, and flame-resistant uniforms, among others.

CHALLENGING ENVIRONMENTS

The Army acquisition community has responded to requests from units in *Operation Enduring Freedom* for equipment designed to withstand the challenging environments of Afghanistan, including lighter-weight body armor, flame-resistant uniforms, pelvic protection gear, and more survivable vehicles. Here, SGT Adam Bowman, a Team Leader with 1st Squadron (Airborne), 40th Cavalry Regiment, pulls security in a wadi after dismounting from a Mine Resistant Ambush Protected vehicle near the Shewak district of Pakhtia province during an Afghan National Army-led patrol May 10. (Photo by SSG Jason Epperson, 4th BCT, 25th Infantry Division Public Affairs.)

LIFESAVING INNOVATIONS

In particular, I am proud of the Army acquisition community's work on the Stryker Double-V Hull vehicle, an innovation that continues to deliver survivability-enhancing improvements to our Stryker Family of Vehicles currently in Afghanistan.

In engineering these eight-wheeled infantry carriers with a blast-deflecting Double-V Hull providing improved protection against roadside bombs, IEDs, and other threats, our efforts rapidly identified and harvested valuable, life-saving innovations. This vehicle went from concept to delivery in about 18 months; in the past, these efforts may have taken longer. Thus far, we already have roughly 300 Stryker DVH vehicles in Afghanistan and have plans to deliver many more; the vehicle is performing very well in combat.

The successful performance of another key innovation, Soldier pelvic protection gear, is also saving lives. We

ALL OF THE GEAR, TECHNOLOGIES, SERVICES, AND SUPPORT WE PROVIDE TO SOLDIERS ARE OF VITAL IMPORTANCE TO THE MISSION. MANY OF US IN THE ARMY ACQUISITION COMMUNITY RESERVE A SPECIAL PLACE IN OUR HEARTS FOR THOSE PARTICULAR TECHNOLOGIES DESIGNED TO KEEP SOLDIERS SAFER IN BATTLE.

INSPIRING SERVICE

The service, sacrifices, and resolve of Soldiers and their families both drive and inspire Army acquisition. Here, BG Gary J. Volesky, 1st Cavalry Division Deputy Commanding General (Maneuver), pins the Purple Heart on SGT Christopher Weber of 1st Battalion, 6th Field Artillery Regiment, at Forward Operating Base Salerno, Afghanistan, Nov. 5, 2011. Weber suffered a concussion when an improvised explosive device exploded 10 meters from his position on April 22, 2011. (Photo by SPC Ken Scar.)

responded to a need from Afghanistan for increased protection from blast events for the pelvis, femoral arteries, and lower abdominal organs.

The gear, which consists of items worn both over and under the Army Combat Uniform trousers, contains materials designed to provide protection from blast fragments and greatly reduces the penetration of dirt and fine debris into a wound. Thus far, we have delivered more than 70,000 Pelvic Protection Systems and are working on plans to send more.

STATE OF THE ART

Recently, on a trip to theater while sitting down with one of our senior leaders in Afghanistan, Bob Lennox and I learned about the successes of the new Pelvic Protection Systems; we heard a story about how three Soldiers had been wounded in the lower abdomen, yet their pelvic areas remained essentially unharmed. The Commander said, "The word is spreading like wildfire, and Soldiers are wearing the new system." This statement is a tribute to our workforce.

I am also impressed and proud that the Army acquisition community is delivering state-of-the-art Flame Resistant Army Combat Uniforms. This important gear, now provided to every deploying Soldier, is specially engineered with flame-resistant fabrics that can safeguard our troops from flames, wind, and extreme temperatures.

Each of these uniforms, manufactured for aviators, aircrews, and small, dismounted tactical ground units, can provide individual Soldiers with four seconds of direct fire protection and prevent second- and third-degree burns in many instances, depending upon the length of exposure.

SUPERIOR PROTECTION

Body armor is a key part of this equation as well; we have worked to provide our Soldiers with the best body armor that exists in the world today. While we are also continuously looking for lighter-weight, next-generation materials able to provide equivalent or superior protection, we have been resolute in our efforts to improve body armor whenever possible.

In fact, our scientists and program developers are in the process of engineering newly designed body armor to better accommodate the needs of female Soldiers. The new body armor, currently being tested and developed, is designed to achieve greater adjustability in the shoulders and hips, to adjust specifically to the needs of our female Soldiers.

In total, we have delivered thousands of plates and improved our Soldier-worn body armor nine times. Furthermore, and perhaps of greatest importance, our body armor has repeatedly saved lives in combat and functioned very well against the enemy rounds that it was designed to defend against.

To illustrate this point, I call upon the experience of another of our Soldiers, Army SSG Fred Rowe, from Greenville, KY, who survived being hit by three enemy rounds to the chest in Iraq.

Rowe testified before the House Armed Services Committee in February 2009, saying, "I took three rounds to the chest with body armor. All three rounds were stopped by the plates. It hurt, but I was still mission-capable. I was still able to do my job."

A PROCESS WITH A PURPOSE

Capability Portfolio Reviews have proven their value in collaboration, direction, agility, and efficiency

by COL Frank M. Muth

MAKING DECISIONS

As Vice Chief of Staff of the Army, GEN Lloyd J. Austin III receives recommendations for changes to policy and fiscal guidance arising from Capability Portfolio Reviews. Here, Austin confers over lunch May 17 with top leadership for Network Integration Evaluation (NIE) 12.2 at White Sands Missile Range, NM. (U.S. Army photo by SSG Lasonya Morales, 16th Mobile Public Affairs Detachment (MPAD).)

If you were the Chief of Staff of the Army (CSA), and you had to train and equip 1.7 million Soldiers with a mission to deploy anywhere in the world, to fight and win our Nation's wars, what would keep you up at night? How about the Army budget? The budget is the first, the middle, and last word of every conversation in the halls and rooms of the Pentagon today.

As funding continues to drop, it is imperative that the tough decisions affecting the Program Objective Memorandum (POM) are informed through a holistic examination of requirements compared to resources. This examination drives capability research, development, acquisition, and sustainment. In today's austere budget environment, how do you optimize every programming dollar and ensure that our Soldiers are the best-equipped in the world?

Answer: the Capability Portfolio Review (CPR).

CPR LEADERSHIP

In February 2010, Secretary of the Army John McHugh directed the Vice Chief of Staff of the Army to conduct an Armywide, all-component review and assess requirements for all Army capability portfolios. Here, McHugh listens in an up-armored vehicle while a Soldier from the 2nd Heavy Brigade Combat Team, 1st Armored Division, briefs him about NIE 12.2 testing at Fort Bliss, TX, May 9. McHugh was touring the NIE, an effort to allow Army acquisition processes to be as agile and efficient as possible. (U.S. Army photo by SGT Edward A. Garibay, 16th MPAD.)

ORIGINS OF THE CPR

In February 2010, Secretary of the Army John McHugh signed a memorandum governing the Army's Capability Portfolio Review Strategy. Tough decisions were looming on the horizon affecting the POM, and he wanted to ensure that the needs of the operational Army were being met and that program, budget, and spending decisions were coordinated and informed. Secretary McHugh directed the Vice Chief of Staff of the Army (VCSA) to conduct an Armywide, all-component review and assess requirements for all Army capability portfolios.

Using this process, the Secretary of the Army takes recommendations to revalidate, modify, or terminate requirements. These decisions establish priorities for research and development (R&D) investment and acquisition. The CPR processes are outlined in the Terms of Reference signed by the VCSA and the Under Secretary of the Army Feb. 22, 2010 (online at **http://armypubs.army.mil/epubs/VCSArmy_Collection_1.html**; AKO log-in required).

THE FIRST SESSION

The Terms of Reference restated the purpose of CPRs and further provided the necessary details assigning leads and support to the Army Staff and Army commands, to meet the minimum information required for the first session. The Terms of Reference include these specific areas:

- The Portfolio Account Overview displays the totality of the capability portfolio over time, across the investment (R&D), procurement, and sustainment accounts. The overview is headed by the G-8 lead.
- The methodology and evaluation criteria used to select and present R&D investment) procurement, or sustainment accounts within the portfolio are described by the G-3.
- The U.S. Army Training and Doctrine Command's Army Capabilities Integration Center presents the facts and assumptions that influenced the original validated requirements. These include key performance parameters (KPPs), key system attributes, basis of issue plan (the fielding schedule), highlights of significant changes, wartime lessons learned, and other pertinent information that may drive a reexamination of the requirement.

WHAT HAS EMERGED, AND WHY THE CPR SHOULD BE INSTITUTIONALIZED, IS THE BENEFIT OF THE COLLABORATION THAT THE CPR FORCES ON ALL ARMY AGENCIES WITH A STAKE IN THE PORTFOLIO.

- The Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology leads the next phase of the process, which reviews investment, procurement, or sustainment accounts comprising a formal defense acquisition program. The program manager has an opportunity at this point to challenge the existing KPPs, key system attributes, cost, schedule, and other performance drivers from both operational and cost perspectives.

The purpose of this phase is to identify potential commonsense alternatives to emerging capability gaps or identified solutions. The final phase, also led by the G-3, presents an analysis of opportunities and identifies alternatives for R&D, procurement or sustainment accounts.

THE SECOND SESSION

While the first session provides significant detail on each program within each portfolio, the second session is shaped by the vision, direction, and intent provided at the end of Session One. In Session Two:

- The G-3 leads a review of requests for information, analysis, and course-of-action modifications from Session One.
- The G-3 presents an adjusted CPR based on adjusted priorities and acceptable operational and other risks derived from discussions during Session One.
- The G-3 identifies investment (R&D), procurement, or sustainment accounts, leads discussion on the qualitative and quantitative aspects of the adjusted portfolio, and determines whether to validate, modify, or terminate the current requirement.
- Finally, recommended changes to applicable policy and fiscal guidance are provided to the VCSA.

EVOLUTION OF THE PROCESS

As of the end of May, each portfolio review had gone well beyond the initial guidance of the previous two sessions.

The CPR has evolved in both frequency and outcome. Typically, a CPR is conducted every three to four months. Although the original concept of optimizing resources and validating requirements still exists, two additional and emerging benefits are byproducts of the CPR process.

First, the collaboration necessary to prepare a briefing for the VCSA provides the opportunity for multiple Army staff agencies to cross-talk, coordinate, and nest their efforts within the portfolio. Second, the VCSA provides vision, direction, and intent throughout the briefing, thus ensuring that Army Staff agencies with a stake can develop, shape, and make slight changes in direction. Therefore, opportunities are not lost, and programmatic funding is optimized within the portfolio.

CONCLUSION

Clearly, the Capability Portfolio Review Strategy has proven worthy of continued effort within the Army's requirements, resourcing, sustaining, and programmatic process. It was never meant to supplant the guidance given from an Army Systems Acquisition Review Council or Configuration Steering Board.

What has emerged, and why the CPR should be institutionalized, is the benefit of the collaboration that the CPR forces on all Army agencies with a stake in the portfolio.

In addition, there is the absolutely critical benefit of receiving vision, direction, and intent from the VCSA on a regular basis during the conduct of these briefings. This arms the portfolio stakeholders with agility and adaptability, thus ensuring a synchronized effort that will optimize scarce resources and enable the CSA to equip and train the very best Army in the world in a fiscally constrained environment.

COL FRANK M. MUTH is the Director of Materiel, Force Development, Army G-8. He is a decorated Army Aviator with combat tours, including command at troop, squadron, and brigade levels in combat. He holds a a B.A. in history from Norwich University and an M.S. in national security and strategic studies from the National War College.

REQUIREMENT PORTFOLIOS AND THE JOINT WARFIGHTER

Understanding the new methodology of the Joint Requirements Oversight Council

by Fred Gregory and Dr. Scott Maley

Since assuming his current role, the Vice Chairman of the Joint Chiefs of Staff (VCJCS) has made it clear that a comprehensive understanding of the Joint force requirement portfolios will be the foundation for improved analysis and decision making by the Joint Requirements Oversight Council (JROC).

After implementing updated guidance for the requirements process in January, the JROC has considered several issues from this portfolio perspective, enabling a more focused discussion at the four-star level on key issues: how the specific capability contributes to the Joint force; the health of related acquisition programs; potential unnecessary duplication within the portfolio; potential trade-offs in requirements; and overall affordability.

THINKING JOINTLY

The Joint Requirements Oversight Council (JROC) will now say "no" to a new requirement when there is something similar in the portfolio, even if the sponsor must use a capability developed by another service. Here, Soldiers from 4th Stryker Brigade Combat Team (SBCT), 2nd Infantry Division and airmen from 5th Air Support Operations Squadron, along with observer-controllers, prepare for a Joint Air Attack Team exercise June 11 at Fort Irwin, CA, as a prelude to deploying to Afghanistan. (U.S. Army photo by SGT Kimberly Hackbarth, 4th SBCT.)

It is not a simple task to change the way the Joint force considers its capability requirements. To help decision makers understand the portfolios, the Joint Staff has developed a set of "scene-setting" portfolio assessments, relating strategy to investment and acquisition program health in terms of cost, schedule, and performance. The Functional Capability Boards can then establish more focused assessments of their portfolios for each specific issue or document review, relating performance or cost parameters to specific validated capability requirements that are not represented in the scene-setting assessments.

The Joint Staff is also working closely with the Acquisition, Technology, and Logistics community to explore how portfolio-level cost-benefit comparison analysis and performance "excursion" assessments can be incorporated into the portfolio review process.

NO FOREGONE CONCLUSIONS

In the past, almost everything presented to the JROC was validated. The sponsor briefed the JROC knowing full well that approval was a foregone conclusion, and would simply discuss the pros of a given requirement from the sponsor's perspective. There was little or no Joint force context, consideration from a portfolio perspective, or assessment of service or DoD affordability considerations.

Validating every new requirement, when there are more pressing priorities, is no longer reasonable. Using the portfolio context, the JROC can now ask more focused questions before deciding to validate capability requirements. For example:

- Is range more important than speed for a given capability requirement? Is speed then tradable against range for that specific capability solution, or across all capability solutions in the portfolio?
- If requirements are reduced as part of cost-performance trade-offs, what is the operational risk? Can other capability solutions in the portfolio mitigate some or all of the risk?

PORTFOLIO PERSPECTIVE

As Vice Chairman of the Joint Chiefs of Staff, ADM James A. Winnefeld Jr. (left) has established that clearly understanding the Joint force portfolios will be the foundation for improved analysis and decision making by the JROC. Here, Winnefeld listens to LTC David Jones, Commander, 2nd Squadron, 38th Cavalry Regiment, 504th Battlefield Surveillance Brigade, during a visit to Kandahar province, Afghanistan, Oct. 16, 2011. Winnefeld was assessing the security situation regarding Pakistan. (U.S. Army photo by SPC Darryl Montgomery, 319th Mobile Public Affairs Detachment.)

FROM THIS POINT FORWARD, THE JROC WILL QUESTION ASSUMPTIONS, UNDERSTAND THE WARFIGHTER IMPACT IF A CAPABILITY IS (OR IS NOT) DEVELOPED, AND CONSIDER THE OPERATIONAL RISK OF TRADE-OFFS WITHIN OR ACROSS PORTFOLIOS.

- Is there any existing capability solution in the Joint portfolio that performs the same or similar function and could be adapted to satisfy the new requirement?
- If additional funding is available to invest in the portfolio, where would it go? If overall funding is being reduced within the portfolio, which acquisition programs should be reduced or discontinued?

QUESTIONING ASSUMPTIONS

From this point forward, the JROC will question assumptions, understand the warfighter impact if a capability is (or is not) developed, and consider the operational risk of trade-offs within or across portfolios.

In some portfolios, capability gaps or "at risk" acquisition programs may present unacceptable operational risk. In other portfolios, redundancies or lower-priority gaps may present an opportunity to shift resources to more critical requirements to further reduce their operational risk.

The JROC will now say "no" to a new requirement when there is something similar in the portfolio, even if it's not a perfect solution or the sponsor must use a capability developed by another service. It will seek out the "knee in the curve" to ensure that each dollar spent provides the best value to the Joint warfighter at acceptable operational risk. The JROC will also prioritize requirement portfolios and their associated acquisition programs based upon changes in strategic guidance, and will de-validate requirements if appropriate.

This is new ground for the JROC and participating organizations, and will require continued reinforcement. The VCJCS continues to emphasize the importance of considering requirements from a portfolio perspective and will only validate capability requirements rooted in solid analysis that are in the best interests of the Joint force.

Once validated, the capability requirements and their associated capability solutions must continue to be relevant to the Joint force in light of evolving threats and the national strategy. Capability solutions that become less relevant, either from a threat/strategy perspective or from changes in schedule, quantity, or cost, will be heavily scrutinized in a fiscally constrained environment.

It's a brave new world out there, and the portfolio perspective is a key element in ensuring that acquisition programs across the Department of Defense are successful, focused, synchronized, and responsive to warfighter needs.

FRED GREGORY is the Acquisition Policy and Process Advisor to the Chairman of the Joint Staff and resides in the Capabilities and Acquisition Division in J-8. He holds a B.S. in engineering with a focus on aeronautics and astronautics from Stanford University, and an M.S. in engineering management from the University of Florida. Gregory is Level III certified in program management and in test and evaluation engineering, and Level I certified in systems planning, research, development, and engineering – systems engineering. Gregory is a Defense Acquisition Corps member.

DR. SCOTT MALEY is Deputy Chief of the Joint Requirements Assessment Division in the Joint Staff, J-8. He holds a B.S. in mechanical engineering from the University of Massachusetts Amherst, an M.S. and Ph.D. in aeronautics and astronautics from Purdue University, an M.B.A. with a concentration in acquisition and contract management from Florida Institute of Technology, and an M.S. in national security strategy from the National War College. Maley is Level III certified in program systems engineering, systems engineering, and logistics; Level II certified in science and technology management; and Level I certified in program management. He is a Defense Acquisition Corps member.

FROM THE DEPUTY ASSISTANT SECRETARY OF THE ARMY FOR PROCUREMENT
MR. KIM DENVER

REPORT FROM AFGHANISTAN

Operational Contract Support Summit highlights the unique responsibilities of contracting in contingency operations

At first glance, it may appear that my office in the D Ring of the Pentagon is far removed from the sacrifices our Soldiers and Civilians face every day in hostile environments around the globe, but I can assure you that the acquisition and procurement communities are actively engaged in supporting our personnel and equipment against enemies who seek to harm us. In addition to our combat role, the Army must be prudent stewards of billions of American taxpayer dollars sourcing thousands of projects in expeditionary operations.

OPERATIONAL CONTRACT SUPPORT SUMMIT

MG William E. Rapp, Deputy Commanding General for Support, U.S. Forces – Afghanistan (USFOR-A), hosted the Operational Contract Support (OCS) Summit, which included Kim Denver (right), Deputy Assistant Secretary of the Army for Procurement; and representatives from the Defense Procurement and Acquisition Policy Office; the DoD Inspector General; the Defense Logistics Agency's Joint Contingency Acquisition Support Office; the U.S. Army Corps of Engineers; U.S. Army Materiel Command; and senior leaders from USFOR-A regional commands. (Photo by SGT Catherine Threat, USFOR-A.)

As the Deputy Assistant Secretary of the Army for Procurement and DoD's Executive Agent Focal Point for Contracting in Afghanistan, I oversee more than $8 billion annually in Army procurements supporting U.S. Forces – Afghanistan (USFOR-A). It is my mission to ensure that the Army supports USFOR-A with responsive, timely, and effective procurements executed by a professional and capable acquisition workforce.

In January, Ms. Heidi Shyu, Acting Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT), and I carried the message about the important operational contract support ASAALT provides to those on the ground in Afghanistan. We traveled to theater to participate in a first-ever Operational Contract Support (OCS) Summit titled "Operational Contract Support: Oversight and Management," and to meet with senior leaders in defense procurement

and senior tactical commanders actively engaged in combat operations.

The two-day OCS Summit provided attendees an unprecedented opportunity to obtain insight into planning and executing operational contract support on the battlefield. Hosted by MG William E. Rapp, Deputy Commanding General for Support, USFOR-A, the summit included representatives from the Defense Procurement and Acquisition Policy Office; the DoD Inspector General; the Defense Logistics Agency's Joint Contingency Acquisition Support Office; the U.S. Army Corps of Engineers; U.S. Army Materiel Command; and senior leaders from USFOR-A regional commands.

The summit brought to light the unique responsibilities of contracting in contingency operations, with sessions focusing on policy perspectives and how to improve the acquisition process; defining the OCS environment in the context of counter-insurgency contracting, vendor vetting, competition, and Afghan First; and oversight and management in a contingency environment with limited resources.

THE BIG PICTURE

From the Pentagon, ASAALT helps synchronize the weapon system procurements of multiple Army contracting centers on behalf of Combined Security Transition Command – Afghanistan, coordinating with contracting offices, vendors, and foreign governments to ensure the delivery of vehicles and aircraft, as well as timely facility construction. In Afghanistan, more than 3,100 service members, Army civilians, and contractors from ASAALT program executive offices and program management offices support USFOR-A. The ASAALT Forward staffs in Afghanistan and Kuwait act as liaisons to many of the USFOR-A regional commands to support Joint Urgent Operational Needs.

In the past year, I've responded to questions, comments, and concerns from members of Congress during testimony about contract oversight in Afghanistan. During this summit, I relayed to attendees that Congress is very interested in the oversight of contingency contracting to ensure that all branches of the federal government are executing contracts in good faith. DoD, the State Department, and the U.S. Agency for International Development, as well as individual services, have repeatedly been called to testify on Capitol Hill about contingency contracting.

It is important for Congress to understand that wartime contracting is not synonymous with enduring overseas contracting operations. Wartime contracting requires us to adapt processes and business systems to an environment that is dangerous, hostile, and often restrictive. This can include a lack of infrastructure, an unstable business landscape, and a failed banking system—in other words, the things we take for granted in non-contingency contracting.

In a summit breakout session, I was reminded of the immense operational pressures our commanders face during a discussion about a transportation contract in Afghanistan with a general officer, when he was pulled aside for an update on an incident involving several casualties. In our zeal for effective oversight, we must always remember that our military is foremost engaged in battle and relies on our timely and responsive procurement support.

RESPONSIBLE DRAWDOWN

Participating in this summit also reinforced the acquisition community's continued responsibilities, even as U.S.

MEETING THEATER NEEDS

Denver confers with COL Michael J. Rogers, Commander, 408th Contracting Support Brigade and Principal Assistant Responsible for Contracting – Southwest Asia. (Photo by LTC John L. Coombs.)

SUPPORTING AFGHAN SELF-RELIANCE

Workers continue construction of the 9th Commando Kandak for the Afghan National Army in Herat province, Afghanistan, in January. The U.S. Army Corps of Engineers (USACE), which participated in the OCS Summit in January, is responsible for building the base, providing Afghan commandos with housing, dining, office, and other facilities. (Photo by Mark Ray, USACE Afghanistan Engineer District – South.)

Forces draw down. Contractors will provide an important role supporting the retrograde of equipment and personnel. MG Rapp reminded us that success in Afghanistan is defined in part by a responsible retrograde, achieving, as he said, "both operational effects and good stewardship during transition and the drawdown of military forces."

Ms. Shyu agreed. "Accounting for this equipment demonstrates supply discipline and helps preserve the capabilities this equipment provides in the coming era of tighter budgets," she said. When the Army footprint diminishes, it is vital that we have careful accountability for all types of property: standard issue, nonstandard, government-furnished, and contractor-acquired.

Another area of concern for Congress, as well as the acquisition community, is oversight of the small construction projects in contingency operations under the Commander's Emergency Response Program (CERP). I participated in an OCS panel and discussed the importance of synchronizing contracting requirements to ensure that commanders have the right structure to contract for the needs in their battle space.

This panel was also an opportunity to raise the importance of designing sustainability into future requirements. We can perform that action much better by leveraging available commercial supply networks and making sustainability an evaluation factor when selecting contractors. We know, for instance, that junior officers and noncommissioned officers overseeing the projects often lack the technical skills to determine whether construction is performed in accordance with the contract.

My office has partnered with the U.S. Army Corps of Engineers (USACE) to close this skill gap. We are working with the USACE Transatlantic Division to recruit and deploy construction representatives (CONREPs) to assist with CERP project scopes, oversight, and technical inspection.

If the use of CONREPs helps to significantly improve CERP project oversight, then we'll explore expanding this concept to other types of contracted support that require expertise, including security services, food services, and transportation.

CONCLUSION

I left the OCS Summit with the renewed awareness that those who procure critical goods and services for our service members and the Afghan National Security Forces are as vital to our national security and the stability of Afghanistan as every person serving in our military campaigns.

The difference for the acquisition community lies in its weapons of choice—contracts and regulations that ensure that the Army and the American public receive the best value for their investment.

KIM DENVER, a member of the Senior Executive Service, was appointed as the Deputy Assistant Secretary of the Army for Procurement in June 2011. Denver holds a B.S. in business administration from the University of Texas at San Antonio and an M.B.A. from the University of Central Florida. He is Level III certified in program management and in contracting and acquisition. Denver is a recipient of the Meritorious Civilian Service Award and the Army Engineer Association Bronze de Fleury Medal, among other awards and honors. He is a member of the U.S. Army Acquisition Corps; Beta Gamma Sigma, the international honor society serving business programs; and Phi Kappa Phi.

KEEPING THE ARMY IN BALANCE
SPC Andrew Harris awaits an approaching UH-60 Black Hawk that is dropping a resupply of food and water at a mountain-top patrol base near Musa Khel District, Afghanistan. Harris is assigned to Task Force 1-501, Brigade Focused Targeting Force. The Focused Targeting Force, Afghan Uniformed Police, and Afghan National Army conducted a joint patrol in Musa Khel June 11. (U.S. Army photo by SSG Martin Strand, 4th Brigade Combat Team, 25th Infantry Division Public Affairs.)

When the tangible aspects of Army Acquisition, Logistics, and Technology—money, force structure, and programs—are in flux as they are now, intangible values become all the more important. In the Army, these strong, enduring values include dedication, innovation, and adaptability.

This issue's Conference Call section reflects the never-ending efforts of the AL&T Workforce to uphold those values, with news and insights from three key annual events covering a broad spectrum of professional activity: the Army Aviation Association of America's Professional Forum and Exposition April 1-4, the Defense Acquisition University's Acquisition Community Training Symposium April 10, and the Association of the United States Army's Institute of Land Warfare Army Sustainment Symposium and Exposition May 8-10.

We hope this section provides you with information and tools you can use as you strive continually to give Soldiers what they require to succeed in battle and come home safely.

FLIGHT *to the* FUTURE

Army Aviators chart path forward with a focus on balancing capabilities and costs

by Kris Osborn

READY FOR DELIVERY

The multiyear procurement contracts for the CH-47F Chinook and UH-60 Black Hawk M are examples of how the Army is lowering production costs, increasing acquisition program stability, and delivering key technological enhancements for aviators. Here, a row of mostly new F model CH-47 Chinooks awaits delivery at Hunter Army Airfield, GA, April 10. The aircraft were delivered to the 1st Battalion, 52nd Aviation Regiment, 16th Combat Aviation Brigade by the Cargo Helicopter Project Management Office within Program Executive Office (PEO) Aviation. (Photo by Randy Tisor, PEO Aviation.)

Army Aviation senior leaders outlined a multipronged set of priorities aimed at a prosperous future for aircraft, aviators, and the broader Joint Force, emphasizing the need to sustain and upgrade the current fleet, reset and repair war-damaged aircraft, and invest intelligently in next-generation technologies, at the Army Aviation Association of America (AAAA) Professional Forum and Exhibition, April 1-4 in Nashville, TN.

"I can assure you that those who work on the acquisition side in this fiscally challenged environment are trying to do what's right for the Army. We will deliver the world's finest equipment," LTG William N. Phillips, Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASAALT), told an audience of military and industry attendees. "The Army Aviation portfolio is healthy. The importance of aviation is understood by our senior leaders. We have to sustain a level of funding that ensures healthy Army Aviation."

Phillips cited the multiyear procurement contracts for the CH-47F Chinook and UH-60 Black Hawk M model helicopters as examples of how Army acquisition is lowering production costs, increasing program stability, and delivering key technological enhancements for aviators.

Highlighting efforts to identify savings and locate efficiencies wherever possible in today's budget environment, Phillips said the Chinook and Black Hawk contracts have saved $449 million and $886 million, respectively.

"We will work to sustain multiyears. They allow industry to implement efficiencies and work with their sub-tier suppliers," Phillips said.

CAPABILITIES AND COST LIMITS

Overall, the Army plans to continue investing roughly $7 billion per year in Army Aviation over the next five years, Phillips said, in a strategy that seeks to balance fiscal constraints with sustainment, reset, and modernization efforts such as the current Future Vertical Lift (FVL) science and technology (S&T) program, designed to engineer more capable, next-generation aircraft by 2030.

Now in the early stages of a broad industry-government developmental effort, the FVL program is geared toward exploring the "realm of the possible" with respect to next-generation air vehicle configurations and mission equipment such as onboard sensors and electronics. The idea is to build several demonstrator vehicles by 2018 as part of a longer-term plan to engineer a faster, more fuel-efficient helicopter with new levels of

"THE ARMY AVIATION PORTFOLIO IS HEALTHY. THE IMPORTANCE OF AVIATION IS UNDERSTOOD BY OUR SENIOR LEADERS. WE HAVE TO SUSTAIN A LEVEL OF FUNDING THAT ENSURES HEALTHY ARMY AVIATION."

high/hot performance ability, endurance, and survivability.

The first portion of the FVL effort, aimed at building a helicopter that can sustain speeds greater than 170 knots while maintaining an ability to hover, will focus upon a medium-class attack/utility variant.

"I think FVL can also fill a gap that we will face in our training. I think we can use that FVL platform to augment the training cycle," said MG Anthony G. Crutchfield, Commanding General, U.S. Army Aviation Center of Excellence and Fort Rucker (AL).

BALANCED METHOD

Phillips and MG Tim Crosby, Program Executive Officer (PEO) Aviation, talked about the Army Aviation investment strategy in terms of a balanced approach that stresses affordability, recognizing that there will be funding limitations while simultaneously preserving the fleet and supporting the need to modernize.

"What we're trying to preach is balance, because we don't want to kill all of our investment programs. We need to have an investment program for the long term. We are preaching balance and accepting some risk. We are focused on FVL, which will bring substantial fuel savings and an increase in horsepower. Technology is changing real fast, and we want to sustain, maintain, and modernize," Crosby told reporters at AAAA. "With the budget and the things we are facing, we can't have everything that we want, so we are taking appetite suppressants. We're taking on risk in some areas, and we have put together a strategy that we believe is achievable."

In the area of fuel efficiency and horsepower, Phillips referred to the Improved Turbine Engine Program, a developmental effort to construct a more powerful, fuel-efficient Black Hawk and Apache engine that exceeds the performance capabilities of today's T700-701D engine.

Preserving a "sacred trust" to serve and protect Soldiers by delivering key, performance-enhancing, and at times life-saving technologies is implicit in Army acquisition, Phillips said. To that end, he said, energy efficiency, budget-conscious decisions, and next-generation capability and survivability equipment figure prominently in the service's procurement strategy.

"We cannot allow anything to come between this trust," Phillips emphasized.

In particular, he cited the deployment of currently fielded survivability technologies protecting aviators, such as the Common Missile Warning System, a flare-based countermeasure system, and the Advanced Threat Infrared Countermeasures (ATIRCM), an infrared, laser-jammer countermeasure system designed to thwart more advanced threats such as heat-seeking missiles by throwing them off course.

"Aviation survivability equipment saves lives. We can't rest on our laurels. At the end of the day, we have to focus on making sure we stay ahead of the threat," Phillips said, referring to the now-in-development Common Infrared Countermeasures, a lighter-weight, more-capable next-generation version of "ATIRCM-like" technology to equip aircraft by 2018.

CRITICAL CAPABILITIES

The Common Missile Warning System (CMWS), a flare-based countermeasure system, is one of a number of currently fielded aircraft survivability technologies that deliver key performance-enhancing, and at times life-saving technologies to Soldiers in combat. Here, Soldiers with the 1st General Support Aviation Battalion, 171st Aviation Regiment conduct CMWS training in conjunction with Man Portable Air Defense Simulators at Yankee Range in McMullen County, TX, Nov. 1, 2011. (Photo by SFC Daniel Griego, 100th Mobile Public Affairs Detachment.)

> "THE AAS PROGRAM IS REAL. FLIGHT DEMONSTRATIONS WILL SHOW US WHAT IS IN THE ART OF THE POSSIBLE. ONCE WE HAVE THE ANALYSIS IN OUR HANDS, WE'LL MAKE A DECISION ABOUT HOW TO PROCEED."

SCOUT INITIATIVE ADVANCES

Phillips and Crosby both discussed the rationale for the Army's path forward on the Armed Aerial Scout (AAS) demonstration, an initiative to assess industry's ability to engineer a scout/reconnaissance aircraft able to meet most of the identified AAS requirements affordably.

The Army released its Request for Information (RFI) to industry on April 25. The planned demonstration is scheduled to begin in August or September and will take place at each of the multiple contractors' facilities.

Placing a premium on affordability, Crosby explained that the Army's approach to a potential AAS program or scout/reconnaissance requirement will consist of a number of options, depending upon the results of the demonstrations. One possible outcome, which Crosby described as the Army's baseline approach, could be a Service Life Extension Program (SLEP) for the OH-58 Kiowa Warrior; a SLEP would involve construction of a new air vehicle for the current fleet of OH-58 scout/reconnaissance helicopters above and beyond the existing Cockpit and Sensor Upgrade Program.

Crosby cited an AAS analysis of alternatives that, he explained, validated the need for a manned reconnaissance platform and affirmed that a developmental program was needed for the AAS because there was no current solution that could meet the requirements.

Industry innovations and recent technological advances, however, may prove able to provide an affordable AAS option, Crosby and Phillips indicated.

"There may be something out there that can get us better off than we are with the SLEP today. The only way we are going to know that is by having a demonstration," Crosby said. PEO Aviation recently conducted an Industry Day where participants were able to ask questions about the AAS demonstration process.

"This is not a fly-off. It is an opportunity for us to see what the SLEP is, what the AAS requirement is, and is it worth taxing some other system in our portfolio to pay for it. Is the improvement worth the investment?" Crosby asked. A decision regarding a path forward is expected later this year, he said.

"The AAS program is real. Flight demonstrations will show us what is in the art of the possible. Once we have the analysis in our hands, we'll make a decision about how to proceed," Phillips said.

The Army is proposing to conduct market research through the RFI, coupled with a voluntary flight demonstration, to inform a capabilities decision and a recommendation for an affordable, achievable materiel solution.

MANNED UNMANNED TEAMING

Phillips also cited what he called "highly valuable" Manned Unmanned Teaming (MUM) technology demonstrated this spring during the Apache Block III Initial Operational Test and Evaluation (IOT&E) at Fort Irwin, CA; the Apache Block III is engineered with what's referred to as Level 4 MUM, a technology whereby Apache pilots can not only view feeds from nearby unmanned aircraft systems (UAS) scanning surrounding terrain, but can also control the UAS sensor payload and flight path.

The Gray Eagle UAS participated in the MUM exercises during the IOT&E.

"With Level 4 UAS control inside an Apache, pilots can see the battle space they are going to operate in miles away," Phillips said.

REDUCED VISIBILITY

Another topic of growing interest and importance in Army Aviation is degraded visual environment (DVE). The DVE phenomenon is described as

A HIGHER LEVEL OF INTEGRATION

Through Level 4 Manned Unmanned (MUM) Teaming, unmanned aircraft systems (UAS) work with attack helicopters such as the Apache Block III attack helicopter, which is engineered with a technology that permits Apache pilots to view feeds from nearby UAS scanning surrounding terrain as well as to control the UAS sensor payload and flight path. Here, the MQ-1C Gray Eagle UAS is ready for takeoff Sept. 15, 2011, during the MUM System Integration Capability exercise at Michael Army Airfield, Dugway Proving Ground, UT, where it demonstrated its MUM capabilities. (U.S. Army photo by SPC Latoya Wiggins.)

"an environment of reduced visibility of potentially varying degree," said Layne Merritt, Assistant PEO Aviation for Engineering and Technology, who is tasked with S&T research and management of DVE within Army Aviation.

"Brownouts are just a small part of DVE. We have to address the holistic environment of reduced visibility," Merritt said.

The DVE system integrates aircraft pilotage augmentation systems, sensors, flight controls, and pilot information or cuing devices. The objective of a DVE system is to expand the range of environments in which the aircraft safely conducts its missions when visibility is limited. "This must be accomplished through a combination of improved situational awareness in limited visibility conditions, enhanced stability and control of the aircraft in all flight regimes, and reduced cognitive workloads when task-saturated," Merritt said.

Through the Project Manager's Office for Aviation Systems, PEO Aviation is responding to an Urgent Operational Needs Statement and will launch a year-long assessment of the Helicopter Autonomous Landing System, a 94-gigahertz radar that can see through smoke, sand, dust, and fog. The assessment will help to determine a formal program-of-record approach and implement a DVE solution for the entire Army Aviation fleet.

The Army has allocated $257 million in S&T funding through 2016 to address DVE. Operating in DVE is ranked as the No. 1 priority in the list of threats, according to Army officials. "We're optimistic in the Army's support of this effort," said Merritt.

For more information, see "Read On" on Page 128.

Sofia Bledsoe, PEO Aviation Public Affairs Officer, contributed to this article.

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Read *On*...

Military leaders zeroed in on myriad Army Aviation programs and issues during presentations at the Army Aviation Association of America (AAAA) Professional Forum and Exhibition April 1-4 in Nashville, TN, stressing the need for intelligent investment in developing technology. Following are some of the highlights of AAAA coverage in the military-oriented media.

Air Soldier System to improve upon Air Warrior, weigh less: Army.mil, April 3, by C. Todd Lopez; **http://www.army.mil/article/77126/Air_Soldier_System_to_improve_upon_Air_Warrior__weigh_less/**.

LTC Ian Klinkhammer, Product Manager Air Warrior within Program Executive Office (PEO) Soldier, talked about the Army's replacing the Air Warrior System with the Air Soldier System, a lighter-weight option providing improved capabilities. Air Soldier will be fielded initially in two sub-increments: the first, 1a, in FY15, and the second, 1b, in FY18.

Army upgrading Unmanned Aerial Systems: Army.mil, April 4, by Kris Osborn; **http://www.army.mil/article/77193/Army_upgrading_Unmanned_Aerial_Systems/**.

Army officials are moving along with a series of technological improvements

to unmanned aerial system (UAS) platforms, officials said. Improvements such as adding a new Synthetic Aperture Radar to the Gray Eagle UAS and developing a Universal Ground Control Station that can show video feeds from Gray Eagle, Shadow, and Hunter UASs are part of a broader effort to bring increased capability to deployed forces.

Army moves toward pure fleet of upgraded Chinooks: Army.mil, April 4, by Kris Osborn; **http://www.army.mil/article/77169/Army_moves_toward_pure_fleet_of_upgraded_Chinooks/**.

The Army continues to modernize the next-generation F-model CH-47 Chinook cargo helicopter while working to upgrade its entire fleet to F-model aircraft, service officials said. The Army has accepted delivery of 169 F-model Chinooks, engineered with next-generation avionics, electronics, and cockpit digital moving-map displays, said LTC Brad Killen, Product Manager for the CH-47F within PEO Aviation.

Army acquiring 'brown-out' assistance for helos: Army.mil, April 5, by Kris Osborn; **http://www.army.mil/article/77350/Army_acquiring__brown_out__assistance_for**.

The Army has undertaken a response to an Urgent Operational Needs Statement asking for high-tech assistance for pilots to better navigate "brown-out" conditions in which terrain becomes obscured. The Army plans to acquire five Helicopter Autonomous Landing Systems to help pilots navigate a degraded visual environment.

Apache Block III helicopter performs well in tests: Army.mil, April 5, by Kris Osborn; **http://www.army.mil/article/77128/**.

Having completed its Initial Operational Test and Evaluation (IOT&E) at Fort Irwin, CA, in April, the Army's AH-64 Apache Block III next-generation attack helicopter should be ready to deploy next year. The IOT&E is a series of combat-like assessments and evaluations placing the aircraft in operationally relevant scenarios to prepare the platform for full-rate production.

Future Helicopter Technology Remains Up in the Air: National Defense Magazine, April 2012, by Dan Parsons; **http://www.nationaldefensemagazine.org/archive/2012/April/Pages/FutureHelicopterTechnologyRemainsUpintheAir.aspx**.

While Army aviation officials push forward with plans to develop a radically new vertical-lift technology before the current fleet reaches the end of its service life, some in industry are skeptical that this technology will mature into a full-blown acquisition program.

Helicopter fleet showing its age: DoD Buzz, April 3, by Michael Hoffman; **http://www.dodbuzz.com/2012/04/03/helicopter-fleet-showing-its-age/**.

MG Anthony G. Crutchfield, Commanding General, Aviation Center of Excellence and Fort Rucker, told the audience at the conference that the Aviation Branch must remain focused on delivering the Future Vertical Lift (FVL) program. Crutchfield urged attendees not to lose sight of the aircraft that will revolutionize the Army's fleet.

EADS Unveils New AAS Concept: Aviation Week, April 2, by Amy Butler; **http://www.aviationweek.com/Article.aspx?id=/article-xml/AW_04_02_2012_p37-442127.xml**.

As EADS North America unveils a new concept for the Army's still-unmet Armed Aerial Scout requirement, executives expressed annoyance over what they called slow and unclear management of efforts to replace the aging Kiowa Warrior fleet. The new concept aircraft is a variant of the UH-72A Lakota utility helicopter.

FVL programme key to US Army modernisation plans: Flightglobal, April 4, by Dave Majumdar; **http://www.flightglobal.com/news/articles/fvl-programme-key-to-us-army-modernisation-plans-370348/**.

Army Aviation's senior leadership strongly endorsed the planned FVL program as crucial to Army modernization. "At some point the helicopters that we have today will be obsolete," said Crutchfield. "So what we need to do is make sure that future aviators and future commanders have the technology and capability that they are going to need to fight future wars."

—*Compiled by* Army AL&T *Staff*

CHINOOK MODERNIZATION

The first CH-47F Chinook cargo helicopter arrived Aug. 15, 2007 at Fort Campbell, KY. The Army continues to develop the next-generation F-model CH-47 Chinook while working to upgrade its entire Chinook fleet to F-model aircraft. The Army plans to have a "pure" fleet of 440 F-model Chinooks by 2018. (U.S. Army photo by Gregory Frye.)

COMMUNICATION 101

DAU symposium points to defining programs clearly and sharing information as top priorities for acquisition professionals

by Margaret C. Roth

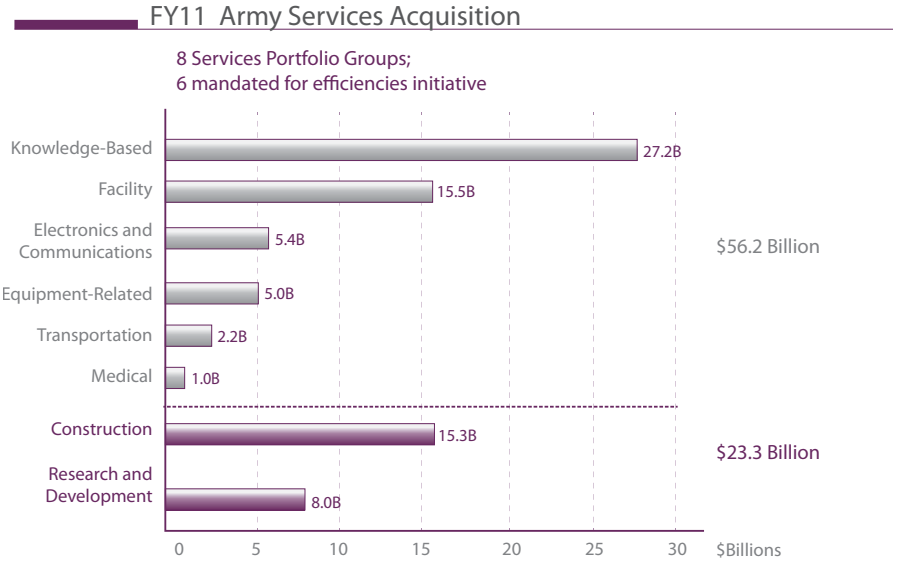
ACQUIRING SERVICES BETTER

Heidi Shyu, Acting Assistant Secretary of the Army for Acquisition, Logistics, and Technology, takes questions from the audience during a panel discussion of the Service Acquisition Executives, at the Defense Acquisition University Community Symposium April 10 at Fort Belvoir, VA. Shyu touched on issues both tangible and intangible, notably cost, efficiency, and communication. (DoD photo by Erica Kobren.)

The Army spent $79.6 billion in FY11 to buy essential services for Soldiers and their families, an amount representing about two-thirds of its yearly acquisition spending. The Defense Acquisition University (DAU) Acquisition Community Symposium April 10 at Fort Belvoir, VA, zeroed in on the process of purchasing those services.

The annual symposium, for which this year's theme was "Understanding the Nuts and Bolts of Acquiring Services," provided practical insights from a host of government and industry speakers on how to acquire support for Soldiers in the most efficient way possible.

But the symposium wasn't all about dollars and cents, or even documents and milestones. A pervasive theme was communication. Good communication is important at every level, many speakers said, both within government and between government and industry.



(SOURCE: Office of the Senior Services Manager, Deputy Assistant Secretary of the Army for Procurement.)

DEFINING THE PROGRAM

"One of the key things I've noticed coming into government," said Heidi Shyu, Acting Assistant Secretary of the Army for Acquisition, Logistics, and Technology, "is that our PMs [program managers] don't take Communication 101." Instead, Shyu said during a panel discussion of the Service Acquisition Executives, "they walk in and … dump a 1,000-piece puzzle on my desk. And through a series of questions, I start to piece together the program.

"They need to be able to tell a succinct story," she said. "The same [applies] with acquisition strategies. You're not getting paid for volume. You're getting paid for quality." The 1,000-piece puzzle "is going to stall your program."

Shyu noted DAU's concerted effort to build acquisition professionals' skills in writing requirements and other documentations, with numerous training tools. (See "Tool Kit" on Page 137.)

Katrina McFarland, then-President of DAU and now Assistant Secretary of Defense for Acquisition, said: "We have seen a great deal of product coming in that should not be the product coming in." Documents need to be concise, product-driven, and clear on timelines, she said.

Frank Kendall, Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) and at the time Acting USD(AT&L), noted the need for ongoing communication between the acquisition and requirements communities. "There's got to be a strong dialogue, and it's got to start at the very beginning" in order to achieve solid, reasonable requirements, he said in his keynote address.

A number of speakers stressed that communication within the government is also crucial to building relationships within the acquisition team—among contracting officials, engineers, PMs, and the other stakeholders—to focus together on achieving results.

TALKING WITH INDUSTRY

On communication outside the government, Kendall emphasized that it is a misconception to think that government officials must not meet with industry representatives about an acquisition program.

On the contrary, he said, "Until the final RFP [request for proposal] goes out … you definitely can talk with industry, and you should. We reached out to industry extensively with the Better Buying Power Initiatives, and we got a better product as a result. Getting information from

industry is something we should encourage, not discourage."

Joanie F. Newhart, Associate Administrator for Acquisition Workforce Programs, Office of Federal Procurement Policy in the White House Office of Management and Budget, agreed. Newhart, in a presentation on "Myths Regarding Acquisition of Services" (see Page 134), noted that open communication with industry before issuing the final RFP allows more input from more sources, giving government contracting personnel a better understanding of industry solutions, which will strengthen the final RFP.

It will also foster healthy competition, Newhart said. "Let industry know you're interested in a good competition. Issue a draft solicitation for information to get industry comments or [hold a] pre-solicitation conference, anything like that. Get their input. You may think you know what you're buying, but you can always have it improved. A lot of times industry just knows better than we do."

Also, she said, "I would really encourage you to make sure that the vendors understand that you want competition, because they get mixed signals sometimes. And if they are not sure, they may err on the side of not bidding because it may cost them some resources." The more government communicates with the vendors about its requirements, the more likely it is that potential vendors who cannot deliver a good product will decide not to bid, Newhart said.

INDUSTRY PERSPECTIVES

In an industry panel discussion on "Changes Needed to Improve Acquisition of Services," representatives of several companies affirmed the value of good communication between government and industry.

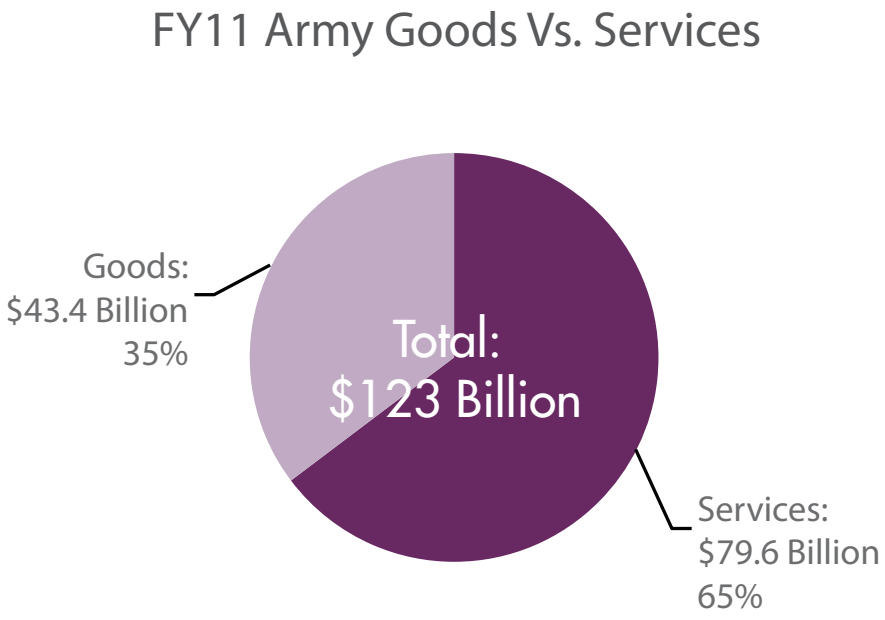
Communication used to be better, said Mark McGraw, Vice President for Training Systems and Services in Boeing Defense, Space, and Security's Global Services and Support business unit.

"I have felt that the level of communication, especially in the acquisition community, has gone down over the last four or five years. And I think that's where you really want to have good communication, so everybody understands the requirements, everybody understands what the different industry bidders are offering."

Lisa Akers, President, ASI Government Consulting Division, blamed acquisition professionals' heavy workloads. "When it comes to the front lines, people who have huge workloads, they have more to lose than gain by having communication if they take a misstep. … I would say one of my experiences is that sometimes people take baby steps and do it in a safer environment and set the scope for what the conversation can be: Here are the things you can't talk about, here are the things you can."

Lack of communication can only encourage protests, McGraw said. "I think you're seeing more and more protests because people haven't had the communication and don't feel they were necessarily treated fairly," he said.

Panel moderator Stan Z. Soloway, President and Chief Executive Officer of the Professional Services Council, the national trade association of the government professional and technical services industry, tied McGraw's point to changes in the government practice of



(SOURCE: Office of the Senior Services Manager, Deputy Assistant Secretary of the Army for Procurement.)

contract debriefing. "As soon as debriefings became more common and more substantive, we saw a dramatic decrease in the number of protests.

"What we're hearing is that debriefings are almost nonexistent now. Sometimes they're electronic, sometimes they are telephonic, [or] you get a memo but no real information. And there's also been an increase in protests," said Soloway. "I don't know if you could make the direct correlation, but I think it hits on Mark's communications point."

T. Wood Parker, Vice Chairman, TASC Inc., held up as an example to follow a National Reconnaissance Office (NRO) contract for engineering services. The NRO bundled about a dozen contracts and issued three separate RFPs, each with different requirements. While the NRO's acquisition strategy changed over time, to the extent that TASC had to cancel and change some of its teaming arrangements, "they did a superb job of communication," Parker said.

After issuing a request for information, NRO was "very responsive to questions that came in. They held three separate industry days as the acquisition strategy evolved. They had one-on-one communication with the contractors. So industry may have been frustrated with the length of the procurement, but industry understood the acquisition strategy as it evolved. We understood the requirements as they evolved," Parker said. As a result, "They had good competition."

The lesson, he said, "is that industry needs communication so that we can understand the requirements, can understand the schedule, and we can give you a better proposal to support the mission." Not that the government can avoid all protests, Parker said. "I will tell you

> "UNTIL THE FINAL RFP GOES OUT … YOU DEFINITELY CAN TALK WITH INDUSTRY, AND YOU SHOULD."

that I think industry is at fault here a lot because sometimes the incumbent loses [and] will protest because they continue to rub it in. There are people that consider these things must-wins, and if they don't win they'll protest." However, he said, "The good companies are not doing that. … I think some of this frivolous aspect of protests will diminish. And I know it's a problem for the government."

Communication is all the more important as the government comes to grips with budget cuts, McGraw said. "There's going to be a lot of stress in the system as these cuts happen. … I think the more we have communication between government and industry about the challenges and the best way to solve that challenge, the better."

The same goes for cuts in industry, McGraw said, citing Boeing's recent decision to close its plant in Wichita, KS.

"That was a big change. As we went through that process, we had a lot of dialogue with our customers on why we were making those changes and what the long-term affordability benefit was to customers. But one of the things I think is key to that whole thing is we're making those kinds of changes to lower our cost structure. The military gets most of the benefit of that, but we want to communicate we're doing that and why," he said.

CONCLUSION

At the end of the panel discussion, in response to a request to the panel for advice to PMs, Parker said, "I hate to be repetitive, but I still believe that one of the key challenges is communication. The old adage is that the bigger challenge in communication is the illusion that it's actually occurred.

"In industry we endeavor to communicate, communicate, communicate, and I know we don't communicate adequately," he said. In government, "the folks at the senior level get it. They understand industry. They understand what's going to happen but don't think that that's getting down to the front lines with respect to the actual work.

"So my response to the question is, think communication within your agencies, with your people on the front lines, and with industry. It is far better for all of us if there's a partnership between industry and the government, and the only way that can be realized is through good communication."

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MYTH BUSTING

Federal procurement official debunks commonly held beliefs in government contracting

by Michael P. Truman

Talk with industry. Don't be afraid of protests. Understand your customer. These are just a few of the numerous suggestions that Joanie F. Newhart, Associate Administrator for Acquisition Workforce Programs, Office of Federal Procurement Policy (OFPP) in the White House Office of Management and Budget, offered at the DAU Acquisition Community Symposium April 10 at Fort Belvoir, VA.

Newhart, a Certified Professional Contracts Manager who spent 13 years in industry before joining the government, talked about "Myths Regarding Acquisition of Services." Newhart's "myth busting" echoed a favorite theme of OFPP leadership, who on Feb. 2, 2011, issued a memorandum for chief acquisition officers, senior procurement executives, and chief information officers that has come to be known as "Myth-Busting 1" (**http://www.whitehouse.gov/sites/default/files/omb/procurement/memo/Myth-Busting.pdf**). "Myth-Busting 2" followed on May 7, 2012 (**http://www.whitehouse.gov/sites/default/files/omb/procurement/memo/myth-busting-2-addressing-misconceptions-and-further-improving-communication-during-the-acquisition-process.pdf**).

Following are commonly held "myths" that Newhart addressed.

Industry days and similar events attended by potential vendors have no value because they don't disseminate a lot of information.
On the contrary, Newhart said, *Federal Acquisition Regulation (FAR)* 15.2 (online at **https://www.acquisition.gov/far/html/Subpart%2015_2.html**) specifically authorizes industry days; OFPP encourages them and has received feedback that they're very helpful.

HARNESSING INDUSTRY KNOW-HOW
Industry has a great deal of knowledge and expertise that can help in defining solutions and establishing requirements at the right stage in the procurement process, said Joanie F. Newhart, Associate Administrator for Acquisition Workforce Programs, Office of Federal Procurement Policy. Here, industry representatives visit the Communications Systems Design Center, which tests and evaluates the capabilities, equipment, and integration of the Warfighter Information Network – Tactical, at Aberdeen Proving Ground, MD, Jan 11. Attendees at the Industry Day toured the laboratories and integration facilities that support the Network Integration Evaluations, the Agile Process, and capability set fielding. (U.S. Army photo by Claire Schwerin, Program Executive Office Command, Control, and Communications – Tactical.)

Government should hold vendor days 45 days before the release of a request for proposal (RFP), she said. "Don't cut that time short, because they need time to react, and you need time to react to what they say.

"Honestly, industry—especially in the area of services—they're the experts, and they are happy to share with you to make a better procurement, to help you get better value for the taxpayers' dollars. We are all taxpayers, so we are in this together," she said.

Giving industry just a few days to respond to an RFP is OK if you've been talking with them for a while.

"No, no, no," Newhart said. "The feedback that we get back is that we need time. And don't put out your RFP on a holiday weekend. Give industry the time it needs, especially if you're secure about getting a good proposal." Otherwise, you risk creating "the appearance that you don't want competition, even if maybe you do but your timeline is a little off."

Conducting discussions and negotiations after the RFP takes too much time.

"You have to do this upfront planning," Newhart said. "The key is when you get your integrated product team together and develop your milestone schedule, you don't want to surprise anyone." The result is a better acquisition outcome, she said.

"Understand your customer … go to their staff meetings, take them out for a cup of coffee," Newhart said. "Just have these partnering meetings, when you will learn so much."

Government contracting personnel can't meet one-on-one with a potential offerer.

Newhart stated that the *FAR* specifically allows one-on-one meetings, but that it's important to keep in mind exactly where you are in the acquisition process. Meetings aren't allowed after issuing an RFP, but before release they are considered a perfectly legitimate way to find out how industry views a problem.

> "GIVE INDUSTRY THE TIME IT NEEDS, ESPECIALLY IF YOU'RE SECURE ABOUT GETTING A GOOD PROPOSAL."

Newhart refuted the idea that meeting one-on-one with a vendor gives the company a competitive advantage. "It's okay to meet one-on-one with vendors. We encourage it," she said. "It's mostly trying to get information on what's out there, industry, what's the latest solution? … It's very, very helpful information as you build your requirements."

If the government meets with a vendor, that may lead to an unsolicited proposal that will delay the entire procurement.

"It's not going to happen, because that puts [the proposal] in a separate 'bucket,' a different process," she said.

A protest is something to be avoided at all costs, and it's necessary to limit conversations with industry to help avoid one.

In fact, Newhart said, restricting communication just might increase the chance of a protest. If the procurement process is not open, a company may protest out of a lack of understanding and may well make up information. "The OFPP lawyers really encourage more communication with vendors. So if you're nervous about this one, talk to *your* lawyers. They are your friends."

When the government awards a contract under the federal schedule, a debriefing is not needed.

Newhart said government should debrief at every opportunity; she pointed out that a lot of agencies are now debriefing the winning offerors. "It puts everyone on the same page; they want to do better next time. There's always a way they can improve, and they want to know what that is so they can be more competitive."

For more information, contact Newhart at ***jnewhart@omb.eop.gov*** *or 202-395-4821.*

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Tool Kit

The Defense Acquisition University (DAU) Acquisition Community Training Symposium April 10 showcased a number of valuable tools to improve tradecraft in the acquisition of services. They include the following:

- **2011 DoD *Guidebook for the Acquisition of Services*** (online at **https://acc.dau.mil/CommunityBrowser.aspx?id=472568&lang=en-US**)—This 60-page guide defines a standard Services Acquisition Process in detail and features a Project Plan for the team to use, among other resources.
- The **Service Acquisition Mall (SAM)**—Located at **http://sam.dau.mil**, SAM is a DAU website created to promote collaboration among acquisition workers at all levels of government. It offers a variety of training resources, samples, templates, videos, and transcripts in an easy-to-navigate format, as well as pertinent news and materials supporting DAU's Services Acquisition Workshop.

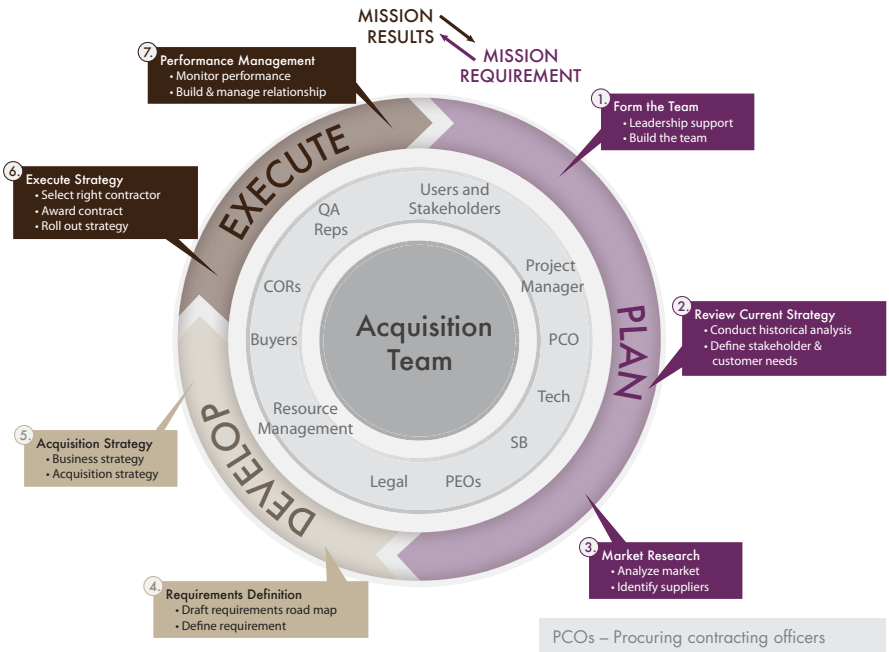
A key feature of SAM is the seven-step Framework for the Service Acquisition Process. From forming the team to market research, defining requirements, and executing the acquisition strategy to performance management, this step-by-step process spells out in detail the players, the purpose, and the objectives of each step, with templates and assignments.

Another key feature is the Automated Requirements Roadmap Tool (ARRT), available for download as a "hands-on" source of real-world examples for performance-based contracts. It is organized by service portfolio groups, with best practices; training, guidance, and videos; and tools to plan, develop, and execute service requirements. ARRT guides the user through a process of "filling in the blanks" on standard templates by asking relevant questions, much like tax preparation software. With these templates, the user can build key contract documents such as a performance work statement, quality assurance surveillance plan, and performance requirements summary.

—Margaret C. Roth

SERVICE ACQUISITION FRAMEWORK
The service acquisition process can be broken into seven steps, each with defined tasks. This graphic shows the seven steps and where the major participants enter the process. (SOURCE: Defense Acquisition University.)

Framework for the Service Acquisition Process



THE LONG ROAD HOME

Iraq drawdown accomplished, lessons learned; now on to *OEF*

by Robert E. Coultas

LOGISTICAL CHALLENGES
The Army faces tough challenges as it reduces its footprint in a landlocked Afghanistan, just as it has faced challenges in supplying *Operation Enduring Freedom (OEF)*. Here, Soldiers from 25th Brigade Support Battalion, 1st Stryker Brigade Combat Team (SBCT), 25th Infantry Division load supplies onto a truck Feb. 17 in Panjwa'i District, Afghanistan, in preparation for a convoy. Supply convoys are especially important to Soldiers in *OEF,* delivering much-needed supplies to each forward operating base, combat outpost, and patrol base. (U.S. Army photo courtesy of 1st SBCT Public Affairs.)

Successfully completing *Operation Iraqi Freedom*, transitioning to *Operation New Dawn (OND),* and meeting President Obama's Dec. 31, 2011, deadline to have all U.S. units out of Iraq was a mammoth undertaking that in some ways has set the stage for an even larger mission: bringing troops and equipment home from *Operation Enduring Freedom (OEF).*

Speaking at the Association of the United States Army's (AUSA's) Institute of Land Warfare Army Sustainment Symposium and Exposition May 8-10 in Richmond, VA, LTG Raymond V. Mason, Army Deputy Chief of Staff for Logistics, G-4, called the drawdown from Iraq "a monumental task that was fully accomplished by the entire Army and Joint team."

Now, Mason said, "…there are tough challenges to come as we reduce our footprint in Afghanistan. The retrograde/drawdown from *Operation Enduring Freedom* will be different in many ways and much harder than Iraq, although the lessons we learned in Iraq have set us on the right path.

"We also will take significant funding reductions with *OND* concluding and *OEF* transitioning, along with the Nation's difficult economic situation. We've been through this before. The sky is not falling, and I firmly believe we can and will tighten our belts, while ensuring we are ready to execute the worldwide missions the American people expect of us," Mason said.

LESSONS LEARNED

How the *OND* retrograde was planned, practiced, and executed was the topic of a May 9 panel discussion titled "Theater Retrograde Operations: Operation New Dawn—Lessons Learned and the Way Ahead."

BG Karen E. LeDoux, Commanding General, U.S. Army Materiel Command – Southwest Asia and U.S. Army Central Command (ARCENT) G-4, said that some of the lessons learned on equipment disposition during the transition from *OND* can be applied to the reposturing of U.S. Forces – Afghanistan.

"We want to reduce the total amount of inbound equipment into Afghanistan … so we are reinvigorating the predeployment site survey. This is a partnership with the Force providers to make sure we identify what is truly needed on the ground, because the mission is changing in Afghanistan," LeDoux said.

"You have to make sure that the outgoing unit and the incoming unit really articulate what [equipment] is on the ground and what is needed, because we are moving the battle space," she said.

LeDoux said one of the initiatives ARCENT is working on is improving its contracting ability.

"Sixty percent of the OMA [Operation and Maintenance, Army] dollars … goes to contracting, and that's not unlike the way it is in overseas contingency operations. We're working hard at the ARCENT level to make sure we can see where we are spending our money and where we are spending our money for contracts. We have stood up a number of boards where we review the requirements and make sure that the Theater Sustainment Command, as the sustainment requirements owner, has the right capabilities that are right-sized on hand," she said.

COL John S. Laskodi, Commander of the 402nd Army Field Support Brigade, said another lesson learned is that those running redistribution property accountability team yards, established to keep track of equipment that would be shipped out of *OND* or handed over to the Iraqi government, should get proper training before starting their assigned task.

"These were ad hoc organizations where we took primarily Air Force people and put them into these yards and said, 'Okay, now let's learn a process and let's retrograde,' " Laskodi said.

"What we've done to make this a lesson learned, and not a lesson identified, is to reform the POI [program of instruction]. We now have handed it off to CASCOM [U.S. Army Combined Arms Support Command] and said, 'We need to take this and institutionalize it across the Army.' So instead of just learning something over a 10-day relief in place, we actually give them some training on this before they actually have to execute their missions."

Other *OND* lessons learned offered at the panel discussion that can be applied to the *OEF* drawdown include:

- Understand the operational plan and create excess transportation or modal capacity to accommodate it.
- Manage expectations.
- Create maximum flexibility in processes and systems to adjust to unforeseen changes and maintain operational flexibility.
- Understand the multiple processes of host nation countries.
- In strategic communication, define what is to be accomplished, when, using what procedures; and the processes to address leftover equipment.
- Maintain the warfighter focus on accountability of organizational equipment, theater-provided equipment, and contractor-managed government-owned property.
- Recognize that contract and contractor management are essential.

GETTING SOLDERS WHAT THEY NEED

SPC Tekoa Duncan, a logistician assigned to the 615th Aviation Support Battalion, 1st Air Cavalry Brigade (ACB), 1st Cavalry Division, uses a forklift to raise a pallet of unserviceable aircraft parts while SGT Kieshia Williams acts as a ground guide at Camp Marmal, Afghanistan, Dec. 16, 2011. Duncan and Williams work at the 1st ACB's support, supply, and activity warehouse, where Soldiers provide units with logistical support, handling in excess of 2,500 transactions a day that involve everything from office supplies to highly expensive aircraft parts. (Photo by SSG Joe Armas, 1st ACB Public Affairs.)

CONCLUSION

Although the *OND* drawdown was a success, the challenge looming now is drawing down from a landlocked Afghanistan by the end of 2014. "We don't have a Kuwait in Afghanistan, so it's a different program," Mason said.

During the *OND* drawdown, Kuwait provided a gateway to the sea and a central safe location to sort out and pack equipment for shipping. *OEF*, by contrast, has two main shipping routes: one through Pakistan, and the Northern Distribution Network (NDN), which snakes through Russia, Tajikistan, Uzbekistan, Kyrgyzstan, Latvia, Azerbaijan, and Georgia. But, with the prolonged closing of the Pakistani border to U.S. convoys, the northern route is taking the lion's share of the workload.

"It's really like the movie *Planes, Trains and Automobiles,* Mason said. "You have truck, rails, and everything going through there … we are looking at multiple routes up that way." Mason said the U.S. Transportation Command and U.S. Central Command "are making very good progress in talking with the nations there" on evaluating how much equipment can be shipped through the NDN and how much would have to be transported by air.

For selected slide presentations at the AUSA Army Sustainment Symposium, go to **http://www.crprogroup.com/eventnotebook/.**

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READINESS AT BEST VALUE

Business Transformation Director emphasizes innovation, adaptability in a changing environment

by Robert E. Coultas

A BALANCED APPROACH TO ARMY BUSINESS

LTG William T. Grisoli, Director of the Office of Business Transformation (OBT) in the Office of the Under Secretary of the Army, told the Association of the United States Army's (AUSA's) Institute of Land Warfare Army Sustainment Symposium and Exposition May 9 that diminishing resources will require innovation to find efficiencies. Here, Grisoli addresses an OBT Town Hall on May 7. (Photo by Gregory L. Jones, Army Multimedia and Visual Information Directorate.)

As the Army looks ahead to 2020 while continuing to fight a war and anticipating budget reductions, its top business transformation leader urged a deeper understanding of how the Army should run, not just how it does run.

LTG William T. Grisoli, Director of the Office of Business Transformation (OBT) in the Office of the Under Secretary of the Army, spoke May 9 about efficiencies, effectiveness, cost savings, value, and balance in conducting business at the Association of the United States Army's (AUSA's) Institute of Land Warfare Army Sustainment Symposium and Exposition in Richmond, VA.

"When people ask me, 'What does business transformation mean to you?,' transformation for me is looking at how we used to do something, and let's not go back, but use motivation to help us in the future. It's not just budget cuts—they drive efficiencies—but [that] many times you lose the money before you have to figure out how efficient you want to be.

"You have to understand, especially for the young officers, not only how the Army runs but understand how it should run—and that's innovation," Grisoli said.

TRANSFORMING THE ARMY

Grisoli said innovation is especially important "when you're an Army that's changing."

"We're an Army at war, and we're an Army taking a look at 2020," he said. "How do we need to look when we get to 2020? We've been told we need to get a little smaller. … [W]e may lose capacity, but the capabilities of 2020 and the human resources we have, we want retained."

SUSTAINING AFGHANISTAN

One of the challenges the United States and its allies face as they prepare to draw down their presence in Afghanistan is preparing the Afghans to be self-sufficient. Here, members of the Nangarhar Agribusiness Development Team (ADT) listen to a pre-mission brief March 16 at Forward Operating Base Finley-Shields, Afghanistan. The mission of the ADT is to support initiatives that will ensure the sustainability of Afghan agricultural productivity. (U.S. Army photo by SSG Greg Biondo.)

When economic times are good and military funding is adequate, sometimes complacency sets in, he said. "When you take a look at the times we've had to deploy folks [to overseas contingency operations], the American people have made sure we had sufficient resources. To have those sufficient resources, sometimes you aren't as efficient or mindful of how to save resources. But when you start coming down a little bit … you have to think through your problem sets … start taking a look at the overall process. You'll see there are plenty of opportunities" to save resources.

A TRACK RECORD OF AGILITY

Grisoli said the Army has adapted quickly to the many circumstances and events arising from more than 10 years of overseas contingency operations.

"We know how to identify a problem, solve the problem, and implement the solution set, and we've done that well over time. We've gone from division-centric to brigade-centric, we've redone how we do force generation, we've gone from tiered to cyclic, we've taken a look at the way we have asymmetrical warfare, biometrics, task force, route clearance. All the different threats that popped up, we were able to adapt and change."

Now, Grisoli said, "The leaders in Washington have some tough choices to make. They're going to decide how many battalions you have in a brigade, how many brigades you're going to have. But our job is to adapt to the environment that we're in and to make sure the units we are leading are ready. … So, you say, are we adaptive? I would say yes."

This adaptability applies at home as well as at war. Responding to a question from the audience about how overseas contingency operations affect the Global Combat Support System – Army (G-Army), Grisoli said, "The key on G-Army is that it will continue to give us the asset visibility and to bring together lots of our business systems in a logistics domain for general funds. At headquarters we have taken time to look at all of our domains—human, sustainment, logistics, acquisition, you name it.

"This particular application, enterprise resource planning, is a way to get our arms around our general fund that we utilize and the way we move equipment. That is going to be extremely important. We need to be able to be audited by FY14 and [have] a clean audit by FY17 for DoD. We've never done that before. It's going to be extremely challenging."

ACQUISITION AS A TEAM SPORT

Another question to Grisoli concerned the need for professionalism.

"Obviously, we in the Army have had some challenges in the acquisition field," he responded, adding: "We are developing a professional acquisition corps above and beyond what we've had before, to go to the next level. Some of the questions I ask our new flag officers are, 'So, when you ask for a service, whether overseas or when you're in a garrison, how often do you follow up on that contract? How often do you call in the contracting officer and ask, 'What is your output? What are you getting for the dollar?' Most of the time, I don't get a lot of feedback, and the reason is, they aren't as linked as they can be.

"We can be better. We need to make sure that if we let a contract out, the user is part of the team. We do a disservice to the acquisition community if we don't work as a team, because you kind of leave them exposed. They are trying to figure out the answer. They are professionals. They know their lane. They need somebody who wrote the scope of work to come in and talk about what they want."

THE OUTLOOK FOR 2020

Grisoli affirmed that "the environment is challenging. There is a lot of uncertainty. We know one thing—the physical constraints will stay. We also know our leadership is committed to readiness, and readiness at best value is something we all need to strive for.

"We have the greatest Army in the world, and we will have the greatest Army no matter the size, as long as we retain the great minds in here, the minds that led the last 10 years and kept us at a certain level, and fielded the right equipment and enabled us to succeed."

As a new generation of leaders rises through the ranks, "you're starting to look at what [requirements] we will need for Army 2020," Grisoli said. "And as GEN Sullivan [retired GEN Gordon R. Sullivan, AUSA President] says, 'Is it postwar or prewar?' We have to have a mindset of prewar. We're coming back, but we are resetting for that requirement."

For more information on the OBT, go to ***http://www.armyobt.army.mil/****.*

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THE RIGHT FIT

In addition to saving money and allowing for accelerated delivery, the containers developed by Program Executive Office (PEO) Soldier were easy to modify to suit the size of the aircraft delivering them. The height of the boxes was reduced for shipping all the way from the United States to the receiving unit in a remote corner of Afghanistan in smaller transport aircraft, such as Antonov 24s and Ilyushin 76s, saving time and reducing the risk of damaging or losing the shipment. Here, a worker at PEO Soldier's Middle River, MD, facility prepares a wooden container packed with uniforms and equipment for shipping to *Operation Enduring Freedom (OEF)*. (Photos by Michael Clayton, PEO Soldier.)

RIGHT-SIZING

PM SPIE creates a custom box to get combat uniforms and gear to deployed Soldiers faster, at a lower cost

by Margaret C. Roth

If no shoe fits, make a custom shoe—without spending a ton of money. It was in this spirit that Project Manager Soldier Protection and Individual Equipment (PM SPIE), within Program Executive Office (PEO) Soldier, developed a solution for shipping combat uniforms and equipment that was faster and more efficient than the standard solution would have been—if the standard solution had worked.

Starting in September 2010, PM SPIE had to ship combat uniforms and associated gear in the new *Operation Enduring Freedom* (*OEF*) Camouflage Pattern for the equivalent of nine battalion task forces over a five-month period. This included multiple sets of uniforms for each deployed Soldier, as well as cold-weather gear, Modular Lightweight Load-carrying Equipment, hats, packs, and other equipment for more than 20,000 Soldiers.

Typically, shippers use standard 20 x 8 x 8-foot metal ISU (Internal Slingable Unit) cargo containers for a job of this magnitude. But these units posed a problem: Their size and weight are incompatible with all but the largest military cargo aircraft, such as the C-5 or the C-17. The C-17, for example, can accommodate eight of the containers in its cargo bay but normally uses pallets because the containers themselves are heavy.

"ONE OF THE MOST IMPORTANT LESSONS WE LEARNED IS THAT YOU USUALLY GET BETTER RESULTS WHEN YOU ADJUST TO THE TRANSPORT THAT IS AVAILABLE, RATHER THAN EXPECT THE TRANSPORT TO ADJUST TO YOU."

With the heavy demand for space on these aircraft, PM SPIE faced delays of nearly two weeks before the uniforms and gear were shipped in the 20- or even larger 40-foot containers.

Logisticians at PM SPIE were also aware that these containers would not fit on the C-130, the air transport workhorse of *OEF*. This meant that if uniforms and equipment were shipped in standard containers, each shipment would have to be broken down for shipping out to forward operating bases (FOBs), a time-consuming and expensive task that could lead to damage or loss of equipment.

COST CONTAINMENT

PM SPIE looked at using smaller ISU 80 metal cargo containers, which, at 9 feet x 88 inches x 80 inches, can fit in the C-130. The problem was cost: $11,868 each.

"When we first ran the numbers and saw that we would need about 400 of them, we were looking at a price tag of over $4.7 million," said COL William E. Cole, PM SPIE. "I asked the team to look for a more flexible and less expensive solution."

PM SPIE's logisticians decided that the best approach was to build low-tech wooden containers for shipping out the equipment. Although the wooden containers would wear out sooner than metal containers, the lower cost more than compensated for more frequent replacement.

Eure & Sons Construction Co., a small woman-owned firm in Hertford, NC, was one of several small firms that were contacted by the contractor NCI Inc. to build containers on short notice. The contracts were awarded under an existing cost-plus-fixed-fee contract with NCI.

The firm's President, William "Chicago" Eure Jr., recalled that three firms were asked to estimate how many crates it could produce within a week or two. "We weren't the first firm that was awarded a contract, but we were willing to make them at the right price within the allotted time," he said.

A SOLUTION ON MULTIPLE FRONTS

Eure & Sons, which is three years old with eight employees, made 580 of the total of 610 wooden shipping containers built for PM SPIE. The wooden containers cost $1,600 each.

The containers saved something besides money: jobs.

"This was a lifesaver for us," Eure said. "Construction was slowing down in our state, so this work flow fit in very well with what we were doing. I believe in supporting our troops, and it was great to be able to play a role in getting them the equipment they need overseas."

Another advantage to using wood containers was the ease with which the design could be modified. PM SPIE soon realized that containers that could fit in the C-130s were still several inches too tall to fit in the other, smaller transport aircraft, such as Antonov 24s and Ilyushin 76s, that contractors sometimes use to ship supplies out to remote FOBs.

So the height of the boxes was reduced enough to enable the same crate to be shipped all the way from the United States to the receiving unit in a far corner of Afghanistan.

Using the new containers also cut the wait at Dover Air Force Base, DE, from 14 days to 3 or 5 days, accelerated the delivery, and ensured that the fielding was

completed ahead of schedule. Even better, overall savings exceeded $3.7 million.

LOW-TECH SAVINGS

By building and using wood shipping containers, PM SPIE reduced shipping losses, sped up shipment of the uniforms to isolated FOBs, and saved the American taxpayer millions of dollars.

"One of the most important lessons we learned is that you usually get better results when you adjust to the transport that is available, rather than expect the transport to adjust to you," said Cole.

"Here at PM SPIE, we are always looking for high-tech solutions and materials to solve problems for our Soldiers, but we don't forget that the best approach can also involve tried-and-true low technology.

"What matters is that we get the job done for the Soldier."

MARGARET C. ROTH is the Senior Editor of Army AL&T *Magazine. She holds a B.A. in Russian language and linguistics from the University of Virginia. Roth has more than a decade of experience in writing about the Army and more than two decades' experience in journalism and public relations.*

COST SAVINGS

By using wooden containers to ship uniforms and equipment to *OEF*, Project Manager Soldier Protection and Individual Equipment within PEO Soldier saved the Army $3.7 million. Here, a wooden container is loaded at PEO Soldier's Middle River facility.

TAKE A LOOK BACK AT AL&T HISTORY

Looking for a particular story from *Army AL&T* Magazine? Doing research on an AL&T-related topic? Check out the new, digital *Army AL&T* Magazine archives!

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SPOTLIGHT

LTC ALAN C. SAMUELS

by Michael P. Truman

It's a long way from Afghanistan to the White House, but U.S. Army Reserve LTC Alan C. Samuels has experienced both in the past year. In a White House ceremony on April 19, Samuels was among nine Americans honored as Champions of Change. He was commended for his research on energy-saving microgrid technology in Afghanistan, technology that saves energy as well as saving Soldiers' lives.

As a civilian, Samuels is a research chemist at Edgewood Chemical Biological Center, Aberdeen Proving Ground, MD, where he studies remote-sensing technology for the Army. In April 2011, he volunteered to deploy to Afghanistan on behalf of the U.S. Army Research, Development, and Engineering Command (RDECOM), with the mission to stand up the RDECOM Field Assistance in Science and Technology Center (RFAST-C) at Bagram Airfield.

It was a six-month deployment that began on May 2, 2011, but extended to a total of nine months in theater. Samuels, for whom this was the first deployment, said he wanted to volunteer where he could be the most help, and he felt he could contribute best in a technical capacity, drawing on his scientific background and education.

SAVING ENERGY, LIVES

RFAST-C, a pilot initiative chartered by RDECOM and supported by U.S. Army Materiel Command, solicits input from Soldiers in theater on field equipment and can then do engineering design, fabrication, and integration of prototypes that address capability gaps. RFAST-C works closely with the item manager for any affected product, also coordinating with the various service laboratories under RDECOM and the forward-deployed S&T advisory teams.

"I found the task to be highly rewarding, in that I had to hit the ground running and essentially write the book on this unprecedented activity," Samuels told *Army AL&T* Magazine.

As Director of the RFAST-C, Samuels also received ancillary taskings from RDECOM, which had an agreement to support the Product Manager Mobile Electric Power within Program Executive Office Command, Control and Communications – Tactical, the provider of standardized tactical electric power to the warfighter. The RFAST-C was tasked with supporting the logistics of receiving, storing, and transferring the microgrid system at Bagram Airfield to its operational setting at Camp Sabalu-Harrison in Parwan province.

Microgrids can reduce fuel usage and the high cost associated with it, but the issue isn't solely cost. According to Katherine Hammack, Assistant Secretary of the Army for Installations, Energy, and Environment, who presented Samuels with the Champions of Change award, 70 to 80 percent of the logistics [in theater] are focused on moving fuel and water, which must be transported by convoys that can be targeted by our adversaries.

"One in every 46 convoys in Afghanistan suffers a casualty," Hammack said. The microgrid technology that Samuels spearheaded in Afghanistan not only reduces energy consumption, but also saves lives in the process.

Samuels said that the microgrid system was one of many products emerging from the Net Zero Plus Joint Concept Technology Demonstration that added value through increased fuel efficiency. The Office of the Assistant Secretary of Defense for Operational Energy Plans and Programs (ASD (OEPP)) elected to sponsor the microgrid system in theater. With the task gaining visibility, Samuels reached back through RDECOM to solicit volunteers with power and energy expertise to stand up an RFAST-C Energy Cell.

The Energy Cell collaborated closely with many outside experts who came into theater to support the microgrid, Samuels said, including Joe Barniak, who championed the initial installation; Brandon Bloodworth, who helped assess the power generation and distribution landscape throughout Afghanistan; and SGM Matthew DeLay, the NCO-in-Charge of RFAST-C, who provided timely networking and theater-wide mobility to the assessment. Through everyone's hard work, Samuels and RDECOM gained significant insight into how power was being managed across forward operating bases, combat outposts, and observation points throughout theater.

In support of the task, Samuels also began data harvesting by publishing a Request for Information through RDECOM Headquarters to help the U.S. Forces – Afghanistan Joint Engineers, who were gathering their own theater energy cell sponsored by ASD(OEPP). Samuels said that his data-harvesting effort evolved into a proposal to layer power demand reduction initiatives onto the microgrid demonstration.

A standard 60-kilowatt Tactical Quiet Generator runs most efficiently when operating at 80 percent or more of its rated capacity. In Afghanistan, Samuels discovered that generators often ran at much lower rates. On top of poor fuel efficiency, generators operating at less than 15 percent capacity will not completely burn off their fuel, and the residue works its way into the exhaust system, causing maintenance concerns

"I FOUND THE TASK TO BE HIGHLY REWARDING, IN THAT I HAD TO HIT THE GROUND RUNNING AND ESSENTIALLY WRITE THE BOOK ON THIS UNPRECEDENTED ACTIVITY."

such as a problem known as wet stacking. Samuels observed a 17 percent reduction in the amount of fuel consumed when microgrid technology was used to keep fewer generators operating at higher load rates.

CHANGING THE CULTURE

But the hardest part of the job wasn't technical, Samuels said. It was effecting the necessary culture changes to implement new methods and finding the necessary scientists and engineers for the tasks.

Even small changes in the culture and a greater awareness of energy consumption could increase the overall savings, he noted. As efficiencies are added, such as improvements in Environmental Control Unit design and increased use of tent shades and insulated quilts, greater reductions in consumption can be expected, Samuels said.

Samuels believes his experience in Afghanistan has enriched his civilian job working on Army remote-sensing technology. "My clarity of purpose in my own research benefits from my firsthand experience with how surveillance and reconnaissance is done in support of tactical and operational efforts," he said.

"As a scientist developing systems that will support our future forces, I feel that having seen what works and what doesn't, in terms of technologies and CONOPS [concept of operations], helps me to better understand the challenges associated with maneuver and combat operations, so that I can focus on approaches that have the highest likelihood of successful implementation."

The Champions of Change program, created as part of President Obama's Winning the Future initiative, recognizes Americans for exceptional achievement in bettering their communities. Samuels said that he finds the White House recognition of his work in Afghanistan extremely humbling. The work that he started at RFAST-C continues to yield tremendous benefits to the warfighter through efficiencies in power generation and demand reduction.

"I am glad I was able to make a contribution to help out," Samuels said.

For more information on the White House Champions of Change ceremony, go to ***http://www.army.mil/article/78341/White_House_honors__Champion_of_Change__for_Afghanistan_energy_saving/****.*

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USAASC PERSPECTIVE

FROM THE DIRECTOR,
U.S. ARMY ACQUISITION SUPPORT CENTER

TO BUILD A STRONGER WORKFORCE, RAISE THE VALUE OF THEIR WORK

In his initial guidance memo to the Defense Acquisition Workforce (DAW) on Oct. 7, 2011, Frank Kendall, Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)), said a top priority for him is to continue strengthening the Acquisition Workforce. "We have increased the number of people in the acquisition workforce over the last few years. While some growth may still be possible, we will increasingly turn our attention to improving the capability of the workforce that we have. Every supervisor should consider a stronger workforce to be his or her most important legacy."

Craig A. Spisak
Director, U.S. Army Acquisition Support Center

To advance this priority, the DAW Management Group (WMG) created nine projects to implement and integrate Kendall's guidance (see Figure 1). In this Career Corner, we'll take an in-depth look at Project 3's objective—create the aura of prestige, status, and fraternity/sorority—led by my organization, the U.S. Army Acquisition Support Center.

Four teams were established to focus on this project's four objectives, which also include focusing on competency; following competency with accountability; and setting "right" standards and selection processes.

MISSION AND GOALS

Our team's mission is to create initiatives for the DAW and ensure that the prestige and status of the workforce are well recognized both inside and outside the acquisition community. In other words, what else can be done to make DAW members valued, recognized as part of an exclusive club, and known for their first-class contributions to the Soldier?

During the initial meetings this spring, the team discussed several avenues to achieve the goal of promoting the defense acquisition profession, including awards; branding, marketing, and publicity; building a more exclusive acquisition corps; setting higher certification standards; creating DAW quality metrics; special seminars and meetings hosted by senior DoD leaders; and "halls of excellence" to recognize the achievements of current and former DAW members.

Many good initiatives are already underway to recognize the value of DAW. Current notable efforts to create an aura of prestige, status, and fraternity/sorority include the Navy's PMT 401 Service Day; multiple acquisition websites, videos, and pamphlets (such as those at **http://www.afciviliancareers.com/careers/careerfields/sciandeng/** and **http://asc.army.mil/**), service acquisition magazines (*Defense AT&L, Army AL&T, Access AL&T*); numerous service award programs (Army Acquisition Excellence Award, Air Force Special Recognition Award in Acquisition Leadership, and the Assistant Secretary of the Navy for Research, Development, and Acquisition's Top Scientists and Engineers of the Year Awards, to name a few); program manager forums; Acquisition Career Field Councils; and program executive office breakfasts.

The challenge is that each of these products exists very much within its own service and community. The motivational ideas and creative communication techniques are not equal, nor shared across the services. Determining how to pick and choose from the best, integrate them, and create a unified approach is the next step.

Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)) Objectives/Projects

1. **Institute a system to measure the productivity and performance of the acquisition system on a program basis.**
2. **Institute a system to measure the productivity and performance of acquisition institutions.**
3. **Elevate the status, prestige, and professional standards of acquisition personnel, focusing on key leaders.**
4. **Increase the cost-consciousness and cost-related performance of the total DoD AT&L workforce (personnel and training).**
5. **Institute a process for defining the affordability of Major Defense Acquisition Programs to include sustainment.**
6. **Establish an internal ability to evaluate the impact of acquisition decisions on the industrial base.**
7. **Strengthen proactive service contracting management at the major functional level (e.g., maintenance or information technology).**
8. **Achieve small-business goals.**
9. **Requirements alignment.**

PROJECT #3 TEAMS

TEAM 1
What: Focus on Competency
How: Certification to Qualification – Require Demonstration of Qualifications (Engaging in FY12 Acquisition Qualification Standards/Proficiency Pilots)

TEAM 2
What: Follow Competency with Accountability
How: FY12 Fitreps and Civilian Appraisal Objectives include "strategic priority" objectives

TEAM 3
What: Set "Right" Standards and Selection Processes
How: Deploy selection boards, enforce standards for key leader positions, and measure/promote to them

TEAM 4*
What: Create the Aura of Prestige, Status, and "Fraternity/Sorority"
How: Special awards, AcqDemo, designated billets, special seminars/meetings, articles, "Hall of Excellence"

* USAASC is Team Lead

(**SOURCE:** U.S. Army Acquisition Support Center.)

THE WAY AHEAD

We've established four subgroups, each with a goal to further define, research, and analyze the team's initiatives:

- Validate acquisition qualifications—All service components should validate position designation and certification or qualification requirements, expand acquisition participation in the Defense Civilian Emerging Leader Program, and review noncompliance consequences and policy or statute changes for removal from the acquisition corps.
- Provide incentives—Meaningful incentives for key leaders should be tied to their programs' success. Prestigious follow-on assignments are one incentive for successful leaders; so are mentorship assignments at the Service Acquisition Executive and AT&L senior-leader levels. Encouraging and promoting memberships in civilian professional organizations is also important. Bottom line: Acquisition personnel must believe their work is valued. Attrition is related to the value placed on a person's work.
- Deploy a strategic communications plan—The intent is to tell acquisition success stories through available media, develop a communication strategy that highlights successful acquisition outcomes, and ensure that senior service members recognize that acquisition professionals are important assets in attaining mission success.
- Enhance the DoD acquisition corps—Deploy special key-leader training sessions hosted by USD(AT&L) along with other functional and leader training; raise the acquisition corps' status by developing an annual induction ceremony; and create a defense acquisition professional organization similar to the Association of the United States Army or the Defense Acquisition University Alumni Association.

Our team's efforts to create the aura of prestige, status, and fraternity/sorority, like all the other USD(AT&L) WMG projects, are a work in progress. Team meetings are being held every two weeks throughout the summer, with the final report due to the USD(AT&L) by the end of the fiscal year.

The ultimate goal is to enhance our acquisition workforce with relevant and realistic incentives, increased capabilities, and recognition as important partners in providing the very best systems for our Soldiers, Sailors, Marines, and Airmen. We want to further the DAW vision of "creating a high-quality, high-performing, agile Defense Acquisition Workforce to achieve technological superiority and protect America's national security." If you have comments or suggestion on this program, please send them to ***usarmy.belvoir.usaac.list.usaascweb-army-alt-magaz-ltr@mail.mil***.

EDUCATION and TRAINING UPDATE

EDUCATION AND TRAINING OPPORTUNITIES

This issue of *Army AL&T* Magazine features an in-depth article (see Page 156) on Training with Industry (TWI), a 10-to-12-month rotational opportunity for Acquisition Officers (O-3 to O-5) to work side by side with industry. Current participating companies are: Google Inc., Microsoft Corp., Coca-Cola Co., Cisco Systems Inc., EADS North America Inc., Lockheed Martin Corp., Computer Sciences Corp., Intel Corp., General Dynamics Corp., and Boeing Co., reflecting the fact that the U.S. Army Acquisition Corps (AAC) has expanded the focus of the FY12 program beyond defense companies to include cutting-edge, innovative corporate leaders.

Moving beyond traditionally defense-based companies such as Boeing, General Dynamics Land Systems, and Lockheed Martin will allow AAC officers to garner insight and creativity in implementing solutions in environments quite different from the traditional Army program management office. For more information, please contact your assignment officer. Contact information is at **https://www.hrc.army.mil/site/protect/branches/officer/FS/Acquisition/Acquistion_Contact__Information.htm**.

The Acquisition Tuition Assistance Program announcement is open through July 31 to all eligible acquisition personnel for undergraduate or business hour completion. Members of the workforce who are at least a GS-11 or broadband/pay band equivalent and have met their position certification requirement are also eligible for graduate-level funding. For more information, visit **http://asc.army.mil/web/career-development/programs/acquisition-tuition-assistance-program/**.

The Excellence in Government Fellowship announcement will be open from July 12 through Aug. 13 to all eligible personnel in grade GS-14 or GS-15, or broadband/pay band equivalent, who have met their current position certification requirement. For more information on this career-broadening experience focused on government and industry best practices, visit **http://asc.army.mil/web/career-development/programs/excellence-in-government-fellows-program/**.

DEFENSE ACQUISITION UNIVERSITY HIGHLIGHTS

The FY13 Defense Acquisition University (DAU) class schedule opened for registration on May 17. Students are encouraged to plan and apply for DAU training as early as possible, for a better chance of obtaining a class in the timeframe requested. Students should also encourage their supervisors to approve their training requests as soon as they apply; applications cannot be processed by the Army registrar's office without the supervisor's approval. Please apply through the Army Training Requirements (ATRRS) and Resources Internet Training Application System (AITAS) at **https://www.atrrs.army.mil/channels/aitas**. For more information on DAU training, including instructions, training priorities, and frequently asked questions, go to **http://asc.army.mil/career/programs/dau/default.cfm**. Once you receive a confirmed

reservation in the requested class, ensure that you attend the class as scheduled.

A NEW OPPORTUNITY IN CAPABILITY DEVELOPMENT

Effective June 1, HQDA approved a proposal submitted by the U.S. Army Training and Doctrine Command (TRADOC), Army Capabilities Integration Center to establish the officer, warrant officer, and enlisted designation SI/ASI 7Y for personnel to identify Soldiers in any area of concentration or military occupational specialty who have successfully completed training in the Capabilities Development Course conducted at the U.S. Army Logistics University, Fort Lee, VA. Acquisition reviews and the recently released *Army Strong: Equipped, Trained and Ready, Final Report of the 2010 Army Acquisition Review* have repeatedly pointed to the need to formalize the training, identification, and qualifications of capability and requirement managers and TRADOC capability managers, much as the Army acquisition community does for its program managers and program executive officers.

These capability and requirement managers are in direct support of identifying and delivering solutions to resolve capability gaps in active theaters of operation. In support of the acquisition community, capability developers and requirements managers at various TRADOC Centers of Excellence and Capability Development Integration Centers, as well as capability developers assigned to U.S. Army Special Operations Command, the U.S. Army Medical Department Center and School, and other Army command force modernization positions determine operational warfighting gaps and establish the requirements for both nonmateriel and materiel solutions.

This course prepares individuals to conduct various Joint Capabilities Integration and Development System activities to include required analysis; capabilities-based assessments; supporting documentation such as the DOTMLPF Change Recommendation, Initial Capabilities Document, Capability Development Document, and Capability Production Document in support of the Acquisition Life Cycle Model and Force Management Process; and review of the impacts on planning, programming, budgeting, and execution and the resource process.

Those interested in attending should enroll through their local training officer in the Capabilities Development Course, course code 2G-F109/551-F37.

For more information on prerequisites, course scope, and additional college or education credit, or to contact the course director, go to **http://www.almc.army.mil/ALU_COURSES/ALUCOURSES.htm**.

TRAINING WITH INDUSTRY BRINGS NEW PERSPECTIVES *to* ARMY ACQUISITION

The U.S. Army Acquisition Corps (AAC) Training with Industry (TWI) program is a 10- to 12-month rotational opportunity for acquisition officers to work and train at top civilian companies, with the objective of bringing back best business practices and translating their training into better Army acquisition outcomes in future assignments.

For FY12, the AAC TWI program saw a revival of sorts with a change in management. "We used to have a person on our TDA [Table of Distribution and Allowances] assigned to Acquisition Branch assignment officers at HR [Human Resources], running events, civil schooling, and TWI," said Scott M. Greene, Chief of the U.S. Army Acquisition Support Center's Acquisition Education, Training, and Experience Branch (AETE) in the Acquisition Career Development Division. "But when HR moved to Fort Knox, KY, there was no one running the program, and we went through a lot of hardships."

Specifically, TWI went from 13 participating companies to five in FY11. Now, however, "after hard work by the AETE Team," the number is back up, to 10 in FY12, Greene said.

Currently participating companies for FY12 include Google Inc., Microsoft Corp., Coca-Cola Co., Cisco Systems Inc., EADS North America Inc., Lockheed Martin Corp., Computer Sciences Corp., Intel Corp., General Dynamics Corp., and Boeing Co. The acquisition officers get a wide range of experience in their respective companies' contracting, logistics, program management, and budget programs, and a different perspective from the Army way of doing business.

WORDS OF EXPERIENCE

LTG William N. Phillips, the Principal Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology and Director of Acquisition Career Management, addresses participants in the Training with Industry (TWI) orientation May 17 in Arlington, VA. (U.S. Army photos by Robert E. Coultas.)

SELECTION PROCESS

Greene said the application process begins when the TWI applicant consults with his or her assignment officer, focusing on background and interests. Depending on that conversation, the acquisition officer may be a good match for more than one company.

Companies also provide input on what backgrounds they're looking for, for

example, an engineering degree, Lean Six Sigma training, M.B.A. degree, or a particular past assignment.

A review board conducted by the Acquisition Career Branch slates the applicants into the 10 available positions.

TWI ORIENTATION

At the TWI orientation May 17 in Arlington, VA, LTG William N. Phillips, the Principal Military Deputy to the Assistant Secretary of the Army for Acquisition, Logistics, and Technology and Director of Acquisition Career Management, congratulated and encouraged the incoming TWI officers on their selection and shared his experience as a TWI student in the mid-'80s with the AH-64 Apache production program at McDonnell Douglas Helicopter Co., Mesa, AZ.

"I approached it with a vengeance that I was going to learn as much as I could about industry and then bring it back to the Army to help me in my job. If you put your heart, soul, and energy into working with the company as much as you can, you'll get a lot out of it," Phillips said.

He reminded the officers that whatever job they are doing during their tour of duty, their "mission in life" is delivering better capabilities to Soldiers, "so they can be successful on the field of battle and come home safely to their families and friends."

ON THE JOB

Incumbent TWI student LTC Laura Poston, who stated her one-year tour in January at Microsoft's Redmond WA, headquarters, had taken all the Defense Acquisition University courses required for Level III certification in program management. But she needed more program management experience to achieve Level III certification in information technology (IT). So she applied for the TWI program.

PREPARING TO TRAIN

Incoming TWI selectees LTC Leonard Newman (left) and MAJ O'Neal Williams take part in the question-and-answer portion of Phillips' presentation. Newman was chosen to train with Cisco Systems Inc. Williams is training with Computer Sciences Corp.

"I figured there was no better place to learn about IT than at one of the largest corporations in the world," Poston said. "As a user of Exchange, Hotmail, Xbox 360, Kinect, and Skype, I figured it could not get any better than gaining the experience at Microsoft." Poston said she has the opportunity to observe and learn the technical and managerial aspects of an IT industry up close. "Given the number of technical solutions Microsoft already provides to the business world and the pace it keeps to maintain its leadership role in industry, I expect to gain insight to developing high-quality services and products in a highly competitive, fast-paced environment."

LTC Kerry Clements is finishing his TWI tour at Boeing Integrated Defense Systems in Huntsville, AL. Clements had the unique opportunity to rotate through more than 10 divisions at Boeing. From Field Marketing, Finance, and Contracting to Air Defense Program, Program Management, Sensors, and Space Launch Systems, "My job is to rotate to each division and learn as much as I can on how each division executes its business mode," he said.

Clements said in May that his most memorable experience at Boeing had been in August 2011. "I had a discussion at a conference with a representative from Boeing's Laser Division in Huntington Beach, CA. We talked about Boeing's work with laser technology; its future defense applications as a defensive or offensive weapon, or even as a deterrent, are limitless," he said. Clements' follow-on assignment is with the U.S. Army Space and Missile Defense Command in Huntsville.

GOOGLE'S VIEWPOINT
Google Inc. representative Dave Cook talks about his company's operations at the TWI orientation May 17 in Arlington, VA.

At the end of their assignments, the Soldiers write an in-depth research paper, which the DACM reads personally, on what they learned from the TWI tour and how those practices can be used to improve acquisition programs.

INDUSTRY PERSPECTIVE

One of the 10 industry briefings at the TWI orientation came from Mike McEnroe, Vice President of Human Resources, Coca-Cola Refreshments. According to McEnroe, Coca-Cola and the military have had a "long, valuable" business relationship.

"In World War II, Coke packed up 64 bottling operations in the U.S. and sent them to the European and Pacific theaters, and the Army assigned 150 officers to the Coca-Cola Co. to ensure that everyone deployed overseas could still enjoy the refreshment. It was the first TWI program, so to speak," McEnroe joked. Coca-Cola co-sponsors Wounded Warrior projects across the United States and intends to hire 800 veterans this year.

McEnroe said "private-sector business leaders have a very different thought process than the military. They have difficulty translating those military jobs into civilian-sector jobs. So the more exposure we get from the military, the more we can all benefit."

MYTH BUSTING

In concluding his remarks, Phillips broke the myth that "investing" in Army Acquisition and its people is not worth it because they can't "deliver anything."

"The truth is … our Soldiers on point have the best armor, body armor, weapons, and ammunition in the world," he told the officers. "And we did it all in Acquisition with our industry partners. When you engage with folks … please share this truth about what we have done."

For more information about the TWI program, go to ***http://asc.army.mil/web/career-development/programs/aac-training-with-industry/****. To apply, contact your assignment officer. Contact information is at* ***https://www.hrc.army.mil/site/protect/branches/officer/FS/Acquisition/Acquistion_Contact__Information.htm*** *(AKO username and password required).*

ROBERT E. COULTAS is the Army AL&T *Magazine Departments Editor and an* Access AL&T *News Service Editor. He is a retired Army broadcaster with nearly 40 years of combined experience in public affairs, journalism, broadcasting, and advertising. Coultas has won numerous Army Keith L. Ware Public Affairs Awards and is a DoD Thomas Jefferson Award recipient.*

UNDERSTANDING INFORMATION TECHNOLOGY THROUGH TWI
LTC Laura Poston, TWI selectee, has been on the job with Microsoft Corp. since early this year. Poston said she's learning the technical and managerial aspects of information technology up close.

ON THE MOVE

CONFIRMATIONS

The Senate on May 24 approved the nomination of **Frank Kendall** to be Under Secretary of Defense for Acquisition, Technology, and Logistics. Kendall had been serving as the Acting Under Secretary since October 2011, succeeding Ashton B. Carter, who became Deputy Secretary of Defense.

Also on May 24, the Senate confirmed the nomination of **Katrina McFarland,** previously President of the Defense Acquisition University (DAU), to become the Assistant Secretary of Defense for Acquisition. McFarland served as President of DAU since December 2010. Dr. James S. McMichael is now serving as Acting President.

The Senate confirmed the following Army general officer nominations:

LTG Dennis L. Via, for appointment to the rank of general and assignment as Commanding General (CG), U.S. Army Materiel Command (AMC), Redstone Arsenal, AL. He is currently serving as AMC's Deputy CG/Chief of Staff.

MG James L. Huggins Jr., for appointment to the rank of lieutenant general and assignment as Deputy Chief of Staff, G-3/5/7, Washington, DC. He is currently serving as CG, 82nd Airborne Division/Commander, Regional Command South, International Security Assistance Force, North Atlantic Treaty Organization, Afghanistan.

MG Patricia E. McQuistion, for appointment to the rank of lieutenant general and assignment as Deputy CG/Chief of Staff, AMC. She is currently serving as CG, U.S. Army Sustainment Command, Rock Island, IL.

MG Jeffrey W. Talley, U.S. Army Reserve, for appointment to the rank of lieutenant general and assignment as Chief, Army Reserve/CG, U.S. Army Reserve Command, Washington, DC, succeeding LTG Jack C. Stultz. Talley most recently served as CG, 84th Training Command (Unit Readiness), Fort Knox, KY.

BG Susan A. Davidson, Deputy CG/Director of Operations, Military Surface Deployment and Distribution Command, Scott Air Force Base, IL, to be Commander, Defense Logistics Agency – Distribution, Defense Logistics Agency (DLA), New Cumberland, PA.

COL Francisco A. Espaillat, U.S. Army Reserve, currently Project Manager Combined Arms Tactical Trainers (Active Guard Reserve), Program Executive Office Simulation, Training, and Instrumentation; for appointment to the rank of brigadier general and assignment as Mobilization Assistant to the Deputy Director (Individual Mobilization Augmentee), DLA, Fort Belvoir, VA.

COL Kristin K. French, for promotion to the rank of brigadier general. She is currently serving as CG, 3rd Sustainment Command (Expeditionary)/Commander, Joint Sustainment

BG Paul A. Ostrowski accepts the flag of Program Executive Office (PEO) Soldier from Heidi Shyu, Acting Assistant Secretary of the Army for Acquisition, Logistics, and Technology and Army Acquisition Executive, during PEO Soldier's change of charter ceremony May 4 at Fort Belvoir, VA. Ostrowski is the fifth Program Executive Officer Soldier since the PEO was stood up 10 years ago. (Photo by Doug Graham, PEO Soldier.)

Command – Afghanistan, *Operation Enduring Freedom,* Afghanistan.

PEO SOLDIER CHANGE OF CHARTER

Program Executive Office (PEO) Soldier celebrated its 10th anniversary and a change of charter on May 4 at Fort Belvoir, VA. Former Program Executive Officers **BG (Ret.) James R. Moran**, the first PEO Soldier, who retired from the Army in 2006; **MG Peter N. Fuller,** who retired in June; and **MG Camille M. Nichols,** now CG, U.S. Army Contracting Command, were present for the ceremony. **MG R. Mark Brown** was unable to attend due to his current deployment as Commander, Joint Theater Support Contracting Command, U.S. Central Command, but sent warm wishes via a video presentation.

One of the key components of the event was the unveiling of the new PEO Soldier logo, which Nichols called "a visual representation that embodies the values of PEO Soldier's dedication to the Soldier, for they are our strength and our purpose."

Having marked its 10th anniversary, PEO Soldier performed the change of charter between Nichols and BG Paul A. Ostrowski, who has served in the Army for 27 years in a variety of acquisition positions, including Director, Operational Test and Evaluation and later Program Executive Officer for Special Programs, U.S. Special Operations Command (USSOCOM); and Systems Acquisition Manager, USSOCOM.

Ostrowski holds a B.S. in geography from the United States Military Academy, an M.S. in systems acquisition management from the Naval Postgraduate School, and an M.S. in national resource strategy from National Defense University. He also attended the Industrial College of the Armed Forces and the Joint and Combined Warfighting School of the Joint Forces Staff College.

DAU HONORS ACQUISITION PROFESSIONALS

The Defense Acquisition University (DAU) culminated its 2012 Acquisition Community Training Symposium April 10 by honoring the winner of the David D. Acker Award for Skill in Communication and the latest inductees into the DAU Hall of Fame.

Then-DAU President Katrina McFarland presented the 2012 Acker Award to **James E. Thomsen,** Principal Civilian Deputy to the Assistant Secretary of the Navy for Research, Development, and Acquisition. The Acker Award is given annually, in memory of former Defense Systems Management College Professor David D. Acker, to a person who has promoted and communicated acquisition management excellence to the acquisition workforce. The award is the most prestigious of those sponsored by the DAU Alumni Association.

The DAU Hall of Fame inductees for 2012 are:

Shay D. Assad, Director, Defense Pricing.

David G. Ahern, Deputy Assistant Secretary of Defense for Strategic and Tactical Systems and a former DAU faculty member (Performance Learning Director for Executive and International Curricula).

Judith A. Ward, formerly DAU Acting Associate Dean for Academics and for Performance Support.

Ronald M. Fontenot, formerly DAU's Contracting Department Chair.

David L. Scibetta, former Director, DAU Operations Support Group.

The DAU Hall of Fame program provides special recognition for individuals who have made significant and enduring contributions over a sustained period to accomplishing the DAU mission and strategic goals, through learning asset design, development, delivery, or other professional activities. Induction into the DAU Hall of Fame is open to all former DAU military and civilian personnel regardless of rank or grade, and to personnel from industry, colleges, universities, other government agencies, and professional associations.

—Robert E. Coultas

Katrina McFarland, then-President of the Defense Acquisition University (DAU), presents the David D. Acker Skill in Communication Award to James E. Thomsen, Principal Civilian Deputy to the Assistant Secretary of the Navy for Research, Development, and Acquisition, during the 2012 DAU Acquisition Community Training Symposium banquet and awards ceremony April 10 at the Fort Belvoir, VA, Officers' Club. (DAU photo by Erica Kobren.)

CONGRESSIONAL UPDATE

CONGRESS MAKES PROGRESS ON FY13 DOD BILLS

The congressional defense committees continue to push toward early passage of the FY13 *Defense Appropriations Act* and *National Defense Authorization Act*. By the end of May, three of the four committees had completed work on their annual legislation, with only the Senate Appropriations Committee (SAC) failing to complete work on its FY13 defense spending bill.

The House Armed Services Committee (HASC) kicked off the FY13 budget cycle April 26 with subcommittee markups of the *National Defense Authorization Act for Fiscal Year 2013 (FY13 NDAA)*. The full HASC then held a marathon markup session May 9 and approved the bill, HR 4310, in a 56-5 vote.

The bill was approved May 18 by the full House of Representatives in a 299-120 vote after debate that lasted for three days and covered 136 amendments.

Even before it passed the House, HR 4310 received three veto threats from the White House Office of Management and Budget (OMB). In its Statement of Administration Policy (SAP), the OMB specifically threatened to veto any *FY13 NDAA* that exceeds the DoD spending topline mandated by the *Budget Control Act of 2011*, limits the President's ability to set U.S. nuclear weapons policy, or "challenge(s) critical executive branch authority" to set policy on the imprisonment and prosecution of detainees suspected of terrorism.

The OMB further objected to numerous other provisions in the HASC-passed *FY13 NDAA*, some of which are enumerated in the table accompanying this article (see next page.)

While the HASC made quick work of its version of the *FY13 NDAA*, the Senate Armed Services Committee (SASC) continued its annual tradition of holding closed-door, classified committee and subcommittee markups.

For the second year in a row, the HASC publicly released the bill and report text on its website before markup sessions, whereas the SASC quietly filed its bill and report with the Senate clerk one week after the markup and did not publish either document to its website.

However, as usual, the SASC did issue a mammoth press release summarizing its bill a few hours after the markup was completed. The committee's bill has since been published by the Government Printing Office (**http://www.gpo.gov/fdsys/pkg/BILLS-112s3254pcs/pdf/BILLS-112s3254pcs.pdf**).

The SASC version of the *FY13 NDAA* actually cuts the DoD budget by $200 million from the $631.6 billion that the President requested in February. The SASC bill also does not contain any of the language on nuclear weapons, gay marriage, or missile defense that drew the wrath of the OMB in its SAP for the HASC bill, although it

FY13 DEFENSE LEGISLATION MATERIALS

House-passed *FY13 NDAA* (HR 4310) **http://www.gpo.gov/fdsys/pkg/BILLS-112hr4310rh/pdf/BILLS-112hr4310rh.pdf**
HASC Report on the *FY13 NDAA* (H.Rpt. 112-479) **http://www.gpo.gov/fdsys/pkg/CRPT-112hrpt479/pdf/CRPT-112hrpt479.pdf**
SASC-passed *FY13 NDAA* (S. 3254) **http://www.gpo.gov/fdsys/pkg/BILLS-112s3254pcs/pdf/BILLS-112s3254pcs.pdf**
SASC Report on the *FY13 NDAA* (S.Rpt. 112-173) **http://www.gpo.gov/fdsys/pkg/CRPT-112srpt173/pdf/CRPT-112srpt173.pdf**
HAC-passed FY13 *Defense Appropriations Act* (HR 5856) **http://www.gpo.gov/fdsys/pkg/BILLS-112hr5856rh/pdf/BILLS-112hr5856rh.pdf**
HAC Report on the FY13 *Defense Appropriations Act* (H.Rpt. 112-493) **http://www.gpo.gov/fdsys/pkg/CRPT-112hrpt493/pdf/CRPT-112hrpt493.pdf**

The OMB objected to numerous provisions in the HASC-passed *FY13 NDAA*.

HOW DOES THE SASC BILL MATCH UP?

"the Administration has serious concerns with provisions that would ... (from the Statement of Administration Policy on the HASC version of HR 4310)	Included in the SASC Bill?
"... violate the Budget Control Act of 2011."	No. The SASC bill actually cuts FY13 DoD spending by $200 million from the budget request.
"... impinge on the President's ability to implement the New START Treaty and to set U.S. nuclear weapons policy."	No. The SASC bill contains little language on START.
"... continue and in some cases expand unwise restrictions that would constrain the flexibility that our Nation's armed forces and counterterrorism professionals need to deal with evolving threats."	No. The SASC bill does prohibit funding for new prison construction in the U.S., but does not prohibit transfers from Guantanamo Bay.
"... prohibit DoD from spending any funds to propose or plan for additional rounds of BRAC."	Yes. The SASC bill does not authorize funds for future BRAC rounds.
"... adopt unnecessary and ill-advised policies that would inhibit the ability of same-sex couples to marry or enter a recognized relationship under State law."	No. This will be a heated issue in conference.
"... jeopardize the implementation of the European Phased Adaptive Approach (EPAA) to missile defense and limit the ability to protect the United States, deployed U.S. Forces, allies, and partners."	No. The SASC majority supports EPAA.
"... prohibit the use of funds for the MEADS program."	Yes.
"... limit the President's ability to determine U.S. military requirements in Europe, negotiate treaties and otherwise conduct diplomacy, and maintain the confidentiality of sensitive diplomatic communications."	No.
"... require DoD to prepare and submit a plan to augment the presence of the U.S. Fifth Fleet in the Middle East and to conduct military activities in that region."	No.
"... require the President to create a new unified combatant command for medical operations of the military health system."	No.
"... would limit the Secretary of Defense's options to provide security for members of the Armed Forces and military installations and facilities in Afghanistan and would undermine the coalition's efforts to encourage Afghan assumption of sovereign duties."	No. The SASC bill requires a report on security contractors, but there is no prohibition.

does follow the HASC's lead in prohibiting funding for further Base Realignment and Closure (BRAC) rounds or completion of the troubled Medium Extended Air Defense System.

SASC staffers were assured by Senate Majority Leader Harry Reid (D-NV) that the *FY13 NDAA* would be brought to the Senate floor in June. Reid, however, has a track record of postponing action on the *NDAA* if debate is projected to last longer than a few days.

Given the election year climate in Washington, any Republican efforts to offer amendments on controversial issues like funding increases or gay marriage will probably cause Reid to withhold action on the *NDAA* yet again.

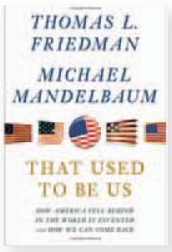
On the FY13 defense appropriations side, the House Appropriations Committee (HAC) completed its work on the bill May 17 in an open session. During the open markup, the bill was heavily praised by committee members on both sides of the aisle, although some Democrats were critical of overall DoD spending levels at a time when the FY13 Budget Resolution authored by House Budget Committee Chairman Paul Ryan (R-WI) would cut funding for domestic programs in education, health care, and transportation.

The *FY13 Defense Appropriations Act* was expected to come to the House floor for debate the week of June 19 after a one-week recess for the chamber. The SAC Defense Subcommittee appeared to be preparing for a markup of the bill in mid-June. This timeline would put the appropriators about one month ahead of schedule compared with a typical appropriations cycle.

OFF THE SHELF

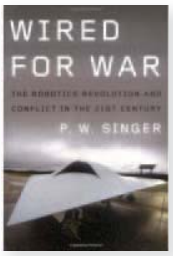
RECOMMENDED READING LIST

Numerous Army leaders over the years have commended the practice of reading to their Soldiers. Even—especially—in this age of information overload, the pursuit of knowledge through books is essential to gain a fuller understanding of acquisition, logistics, and technology. In the words of GEN Raymond T. Odierno, Chief of Staff of the Army, "We can never spend too much time reading and thinking about the Army profession and its interaction with the world at large. … There is simply no better way to prepare for the future than a disciplined, focused commitment to a personal course of reading, study, thought, and reflection." On that note, *Army AL&T* Magazine publishes *Off the Shelf* as a regular feature to bring you recommendations for reading from Army AL&T professionals.



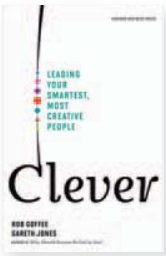
THAT USED TO BE US: HOW AMERICA FELL BEHIND IN THE WORLD IT INVENTED AND HOW WE CAN COME BACK
by Thomas L. Friedman and Michael Mandelbaum (New York, NY: Farrar, Straus and Giroux, 2011, 400 pages)

New York Times op-ed columnist Friedman teams up with Mandelbaum, Johns Hopkins University's Christian A. Herter Professor of American Foreign Policy, to make recommendations for meeting four huge challenges America faces today: the information technology revolution, pervasive deficits, unbalanced energy consumption, and globalization. The book illustrates how America's history offers answers that will enable us to overcome the difficulties these challenges pose. The authors point out the successes of modernized China in fields such as education, industry, and technology, to remind us of the ways in which "that used to be us." With a sobering yet ultimately optimistic point of view, Friedman and Mandelbaum believe that the recovery of American greatness is possible, and they walk us down the path to get there.



WIRED FOR WAR: THE ROBOTICS REVOLUTION AND CONFLICT IN THE 21ST CENTURY
by P.W. Singer
(New York, NY: Penguin Press HC, 2009, 512 pages)

Singer shows the reader all the various players in this strange new world of robotic warfare. More than 7,000 robotic systems were used in the conflict in Iraq. Remote-control pilots are killing terrorists in Afghanistan from inside an air-conditioned office in Nevada. Singer, Director of the 21st Century Defense Initiative at the Brookings Institution, weaves historical facts with field interviews, illustrating the startling effects of robotics in the war zone as well as in the political arena at home. Moving humans off the battlefield makes wars easier to start but more complicated to fight. Replacing men with machines may save lives, but will it lower morale and the psychological barriers to killing? The book vividly shows the fascinating and frightening aspects in the future of modern warfare.



CLEVER: LEADING YOUR SMARTEST, MOST CREATIVE PEOPLE
by Rob Goffee and Gareth Jones
(Boston, MA: Harvard Business Review Press, 2009, 208 pages)

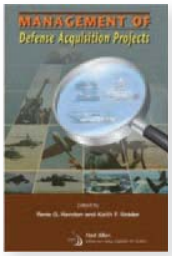
Jones and Goffee, both professors at the London Business School, present a manual on identifying and handling your smartest and most creative employees for maximum benefit. The book shows, especially in bad economic times, how the culture of the company must be structured to engage creative, yet often idiosyncratic, employees for the overall health of the organization. The authors explore success stories from diverse companies, including Cisco Systems Inc., Nestlé, and Google Inc., that have embraced this management model. Pithy and balanced, the book details why and how you should create an environment where your most brilliant people can flourish, and in doing so allow your business to flourish as well.

RECOMMENDED READING LIST

THE MANAGEMENT OF TECHNOLOGY AND INNOVATION: A STRATEGIC APPROACH (2ND EDITION)

by Margaret A White and Garry D. Bruton
(Mason, OH: South-Western College Publishing, 2010, 416 pages)

White and Bruton, seasoned business professors with more than 100 published articles between them, examine the concepts connecting core business strategy with technology and innovation. Their book explores how these functions intermix within systems, structural design, and product development, as well as how they contribute to an organization's overall success. This holistic approach establishes a happy medium between practical insights and essential theory with real-world examples. This edition comes with updated lists of research and trends to help support strategic decision making.



MANAGEMENT OF DEFENSE ACQUISITION PROJECTS (LIBRARY OF FLIGHT SERIES)

Edited by Rene G. Rendon and Keith F. Snider
(Reston, VA: American Institute of Aeronautics and Astronautics, 2008, 220 pages)

This book, written for both students and people already working in the field of defense acquisition, covers the enormous range of disciplines that must be navigated for successful acquisition outcomes. Sections are written by academics and practitioners from the Naval Postgraduate School, providing overviews of functional areas of acquisition, such as systems engineering, financial management, contract management, test and evaluation, production management, and logistics and sustainment. Acquisition projects cost billions of dollars annually and can benefit from a clearly written guide to the myriad functions involved in the process. The book is also organized in a manner that will withstand DoD policy changes that might otherwise give it a short shelf life. Each chapter begins with objectives and ends with study questions to ponder.

THE HISTORY OF ACQUISITION IN DOD: REARMING FOR THE COLD WAR 1945-1960 (VOLUME I)

by Elliott V. Converse III
(Washington, DC: Historical Office of the Secretary of Defense, 2012, 766 pages)

The beginning of the Cold War was a dynamic time for the Department of Defense. In a new book published by the Historical Office of the Secretary of Defense, Converse, a retired Air Force Colonel who served as the lead historian on the Defense Acquisition History Project, describes a 15-year window that left an indelible imprint on modern weapons acquisition. The book, the first in a six-volume series, is chock-full of case studies, personality profiles, charts, and photographs. In speaking about the book at a May 9 event hosted by the Defense Acquisition University Alumni Association, Converse said, "One important thread that runs through the volume is the consensus that American leaders had at the end of World War II that the United States would seek security in the future by maintaining an advantage in the most technologically advanced weapon systems over any possible opponents." According to Converse, the book wasn't written for historians, but the workers in the acquisition workforce. It can be downloaded at **http://history.defense.gov/resources/OSDHO-Acquisition-Series-Vol1.pdf**. (For more coverage, see Then & Now on Page 166.)

*A wealth of suggested titles is in GEN Odierno's professional reading list, online at **http://www.history.army.mil/html/books/105/105-1-1/index.html**. Is there a book you'd like to recommend for this column? Send us an email at **usarmy.belvoir.usaasc.list.usaascweb-army-altmagazine@mail.mil**. Please include your name and daytime contact information.*

THEN & NOW

1945 & 2012

Many of the major changes that shaped the nature of modern DoD weapons acquisition were instituted in the decade following World War II, starting around 1945. The postwar environment generated a flood of changes in the way DoD conceptualized and produced weapon systems, as the strategic landscape evolved with the beginning of the Cold War.

As the acquisition process also evolved, so did the language used to describe it, according to Dr. Elliott V. Converse III, a retired Air Force Colonel who served as the lead historian on the Defense Acquisition History Project and author of the new book, *The History of Acquisition in the Department of Defense: Rearming for the Cold War 1945-1960 (Volume I)*. Even the meaning of the simple term "defense acquisition" has changed over time, expanding to include procurement, research and development, and production in its modern understanding.

Strangely enough, in the period 1945-1960, the term "acquisition" was rarely used to describe the process that it does today. Back then, the term "logistics" described the wide array of processes that we usually think of when we say "defense acquisition." Not until the late 1950s and early 1960s did "defense acquisition" slowly work itself into the vocabulary of weapons procurement. As it evolved, the term assumed more and more of the all-encompassing meaning originally associated with the term "logistics."

Similarly, by the end of the 20th century, "logistics" had taken on the much narrower meaning that we assume today, generally referring to planning, moving, and maintaining deployable forces. Acquisition, on the other hand, has come to describe a larger cycle beginning with a weapons concept and lasting all the way to fielding and maintenance.

For more information on the history of DoD acquisition, visit the DoD Historical Office at ***http://history.defense.gov/****. Converse's new book is online at http://history.defense.gov/resources/OSDHO-Acquisition-Series-Vol1.pdf. For a historical tour of* Army AL&T *over the past 50 years, visit the* Army AL&T *Magazine archives at* ***http://asc.army.mil/magazine/alt-magazine-archive/****.*

'LOGISTICS' OF TODAY

Soldiers with the 453rd Inland Cargo Transportation Company move a 20-foot cargo container during *Exercise Red Dragon 2012* at Fort McCoy, WI, on June 1. The term "logistics" has evolved from its earlier meaning to focus more narrowly on the science of planning and carrying out the movement and maintenance of forces. (U.S. Army photo by 1LT Eric Connor, 335th Signal Command.)

Save THE DATE

SUNDAY, OCTOBER 21, 2012

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Army Acquisition Excellence (AAE) Awards

ASA(ALT) Contracting Noncommissioned Officer (NCO) Award for Contracting Excellence

David Packard Excellence in Acquisition Award

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Under Secretary of Defense for Acquisition, Technology, and Logistics Workforce Achievement Award

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ARMY ACQUISITION, LOGISTICS & TECHNOLOGY
ISSN 0892-8657

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"The CPR process has enabled the Army to firmly establish the strategic direction for future warfighting capabilities and codify the strategy in broad, senior-level support across the Army for the programmatic changes necessary to bring strategy to reality."

BG Jonathan A. Maddux
Program Executive Officer Ammunition

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