
Defense AT&L
January-February 2007
A PUBLICATION OF THE DEFENSE ACQUISITION UNIVERSITY
The Honest Broker for Science and Technology
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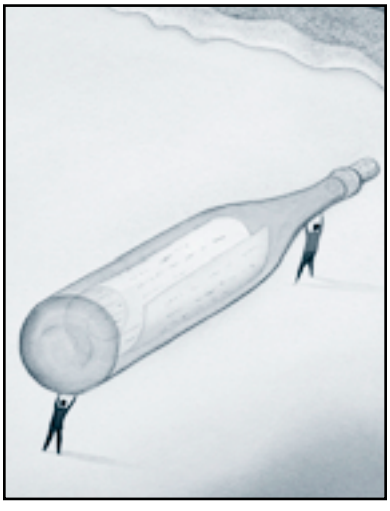
Vol XXXVI, No.1, DAU 193



Published by the
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Defense AT&L (ISSN 1547-5476), formerly *Program Manager*, is published bimonthly by the DAU Press and is free to all U.S. and foreign national subscribers. Periodical postage is paid at the U.S. Postal Facility, Fort Belvoir, Va., and additional U.S. postal facilities.

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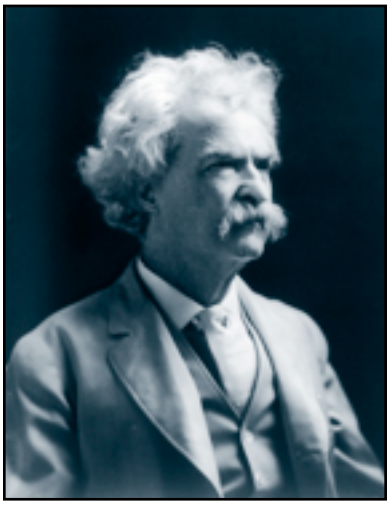
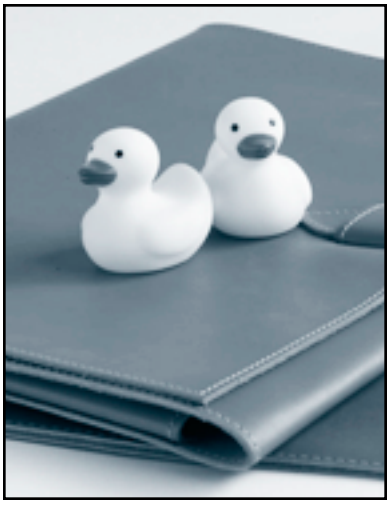
FT BELVOIR VA 22060-5565





ALSO

DEPARTMENTS

The Honest Broker for Science and Technology

Dr. Mark J. Lewis, U.S. Air Force Chief Scientist

Dr. Mark J. Lewis has served as chief scientist of the U.S. Air Force since 2004. He provides assessments on a wide range of scientific and technical issues affecting the Air Force mission. In September 2006, Lewis spoke with Randy Zittell, professor of systems engineering at the Defense Acquisition University, about his vision for championing real experimentation and taking risks up front, and about ensuring a focus that promotes current technology while still keeping a firm eye on the long-term picture.

Q

The Air Force chief scientist exists in a purely advisory capacity, with an emphasis on providing an uncensored view of Air Force science and technology (S&T). With no programs to manage or budget to control, you're free to help the Air Force leadership in an unbiased capacity—a unique position among the Services. What are your duties, and what's the Air Force's vision for the position?

A

My job has several key roles. In many ways, I am the honest broker for science and technology. I am the person who is supposed to tell the chief and the secretary and the vice chief and the under secretary of the Air Force what we are doing right, what perhaps we are not doing right, what we are missing, and what we need to re-emphasize.

My favorite analogy for the role of chief scientist is from one of my predecessors, Dr. Michael Yarymovych, who was chief scientist in the 1970s and originated the idea of the Global Positioning System.

When I was starting this job, Mike said, "You know, you can read all the formal descriptions of what the chief scientist does—advising the chief and representing the Air Force—and that is all fine, but here's the way you think about the job: The chief of staff is the king, and the other generals are like the noblemen. The chief scientist is the court jester, whose role is to provide the scientific entertainment. But in the Middle Ages, the only person who could be honest with the king was the court jester. If others tried, their heads would probably get lopped off."

I have never yet had to explain to someone why investment in science and technology is important. Everyone in our leadership understands the concept of investing in the future.

Photographs by SSG Mason Lowery, USA.

So that's my job, to be honest with the chief. Sometimes I describe it as separating physics from PowerPoint®. When someone's trying to sell us a great concept—you know, an airship that is going to hover at 100,000 feet over one spot on the earth indefinitely and do everything we ever wanted—and everyone else is telling the secretary and the chief, "Wow, this is the greatest thing since sliced bread," I am the person who has to say, "Hold on a minute. This violates at least two or three laws of physics."

It is important, therefore, that I not have programs or people to manage because I need to make sure in my job that I don't have territory to protect.

Other aspects of the job stem from that role. One is that I am a science and technology advocate for the Air Force. I like to remind people that our founder, Hap Arnold [*Air Force Gen. Henry H. Arnold*], knew that the force he was envisioning had to be grounded in S&T. One of the first things he did was call a meeting with Theodore von Kármán, one of the greatest aerodynamicists of the 20th century. They had a conversation on Long Island—actually in Hap Arnold's staff car—in which Arnold told von Kármán that he wanted Air Force research to be tied into the pivotal scientific communities in the United States.

They called together a group that became known as the Scientific Advisory Group; it was the predecessor to our Scientific Advisory Board. They mapped out the future of Air Force technology, which became the "Toward New Horizons" study we all revere. That is a very powerful message: From day one, the Air Force was a science and technology Service that understood the need to draw on outside expertise to help guide that S&T. This office is really an extension of that.

Now here's the good news about my job: When I walked into this office, I thought one of my roles would be to remind our leadership about the importance of science and technology. I have never had to do that. I have never yet had to explain to someone why investment in science and technology is important. Everyone in our leadership understands the concept of investing in the future.

But having said that, I also sometimes describe myself as the S&T canary in the Air Force mine. I want to be the first alert if something is going awry. I want to be the person who picks up on the problem before it becomes a major issue. In that capacity, I see myself as a way to—for a lack of a better description—short circuit the chain of command on certain S&T issues. I represent a direct conduit to the very top levels of the Air Force in S&T matters. When a bench-level scientist or engineer working in the lab has a great idea or a concern, issue, or capability, I see myself as the way to really elevate that to the top level, if it is important enough.

Dr. Mark J. Lewis

Chief Scientist, U.S. Air Force

Dr. Mark J. Lewis serves as chief scientific adviser to the chief of staff and secretary of the Air Force, providing assessments on a wide range of scientific and technical issues affecting the Air Force mission.

Lewis received his professional education at the Massachusetts Institute of Technology, earning bachelor's degrees in aeronautics and astronautics, and in earth and planetary science; a master's degree in aeronautics and astronautics; and a doctorate. He is currently on leave from his position as professor of aerospace engineering at the University of Maryland and director of the Space Vehicles Technology Institute, College Park, Md. For the past 19 years, Lewis has conducted basic and applied research in and taught many aspects of hypersonic aerodynamics, advanced propulsion, and space vehicle design and optimization. His work has spanned the aerospace flight spectrum from the analysis of conventional jet engines to entry into planetary atmospheres at hypervelocity speeds. A frequent collaborator with both government and industry, his research activities have contributed directly to several NASA and Department of Defense programs in the areas of high-speed vehicle and spacecraft design.

Lewis is the author of more than 220 technical publications and adviser to more than 50 graduate students. He is active in national and international professional societies, with responsibilities for both research and educational policy and support. In addition, he has served on various advisory boards for the Air Force and DoD, including the Air Force Scientific Advisory Board, where he participated in several summer studies and chaired a number of science and technology reviews of the Air Force Research Laboratory.

Another role is as the representative of Air Force S&T on the outside, interacting with our sister Services and with NASA. I can point to NASA, especially, as one of our real good-news stories over the last year-and-a-half. We have a new NASA administrator who is very keen on interaction through the Department of Defense. We've been doing a number of joint activities in an effort to make sure our programs are in line, that they don't overlap, and that we advance mutual interests in S&T.

Q

As part of a focus on experimentation instead of demonstration for introducing new technology, you've said that taking the risks up front, even before acquisition begins, will not only lower total program costs, but also allow the introduction of technologies and solutions. Would you expand on this idea?

A

One concern I had coming to this job is that I think, to a certain extent, the Air Force and the DoD—and in fact the United States in general—are too much in the mode of demonstration as opposed to real experimentation. Let me draw the important distinction because sometimes when you tell people you're against demonstration, they respond, "Oh—you're against flight test," and of course I'm not, not at all. I'm a big fan of flight test. I think we should do more flight tests, more experimental vehicle types of things, in addition to modeling and simulation and ground tests.

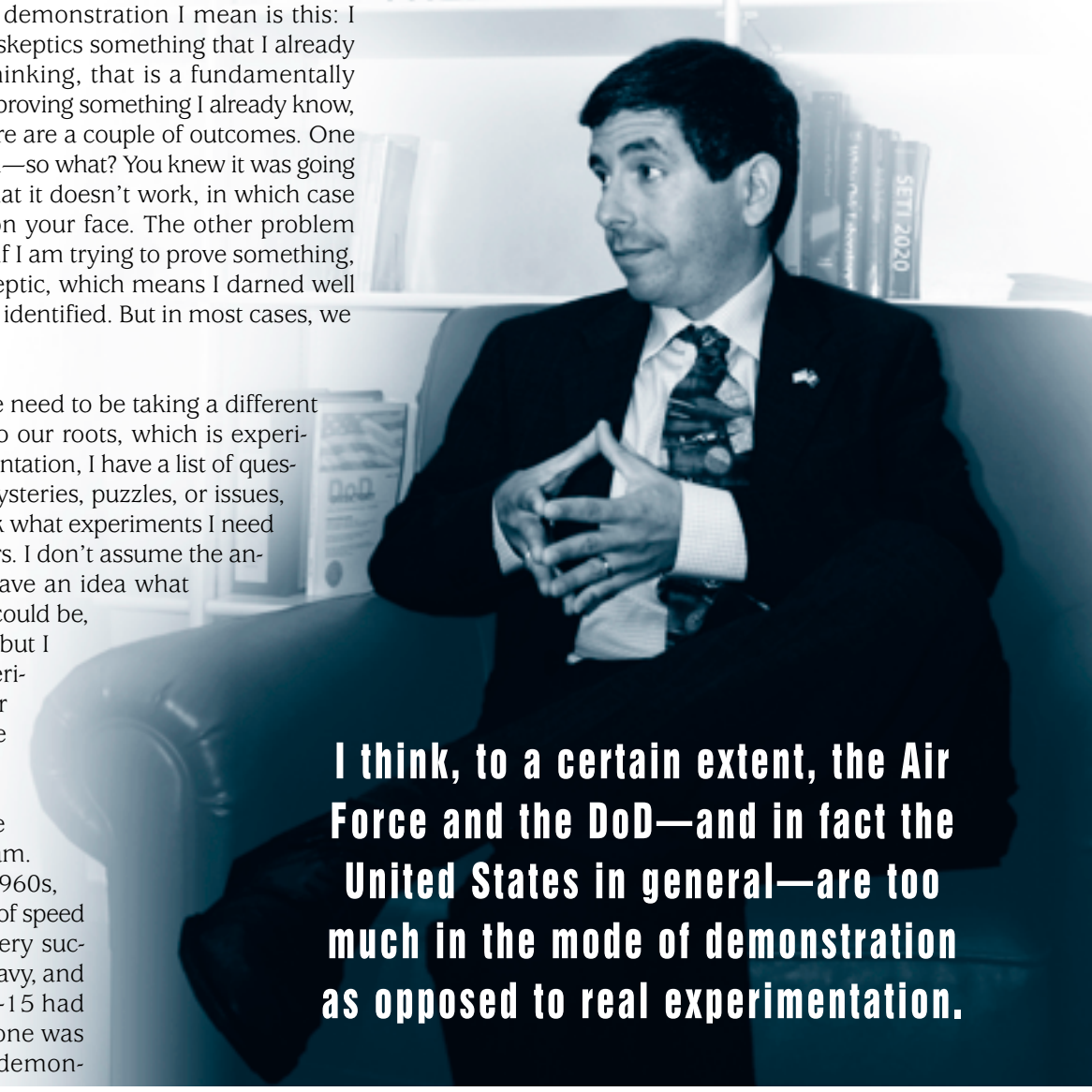
But the definition of a demonstration I mean is this: I want to prove to some skeptics something that I already know. In my way of thinking, that is a fundamentally flawed approach. If I'm proving something I already know, why am I doing it? There are a couple of outcomes. One is that it works, and then—so what? You knew it was going to work! The other is that it doesn't work, in which case you've just fallen flat on your face. The other problem with that notion is that if I am trying to prove something, that means I have a skeptic, which means I darned well better have that skeptic identified. But in most cases, we don't.

My argument is that we need to be taking a different approach: to go back to our roots, which is experimentation. In experimentation, I have a list of questions, perhaps some mysteries, puzzles, or issues, that I need to solve. I ask what experiments I need to do to find my answers. I don't assume the answer up front. I may have an idea what the answer should be, could be, or what I want it to be, but I do fair and honest experimentation; and whatever answer I get, that is the proper answer.

My model for that is the X-15 rocketplane program. The X-15 flew in the 1960s, pushing the boundaries of speed and altitude. It was a very successful joint Air Force, Navy, and NASA program. The X-15 had 199 flights, and every one was an experiment, not a demonstration. Some 750 technical documents came out of the X-15 flights.

This is the kind of model we need to be going towards, and once we do that, it reduces our risk up front. In other words, we learn *before* we are making the investment in the large, expensive system. There is another part to this philosophy, which is that we are willing to take risks. When you are doing an experiment, it's okay if that experiment doesn't work. I learn just as much sometimes from an experiment that doesn't work as from one that does work. But with a demonstration, if it doesn't work, then it fails. If we do the risk taking up front at the experiment stage, it really sets us up for program success down the line.

I'll give you my favorite example of this. Several months ago, I was supposed to see a wind tunnel test that the Air Force was sponsoring with a private sector company. A couple of days before the test, the lead engineer called, very embarrassed and apologetic, to say they wouldn't be able to show me the test because there had been a



I think, to a certain extent, the Air Force and the DoD—and in fact the United States in general—are too much in the mode of demonstration as opposed to real experimentation.

problem with the wind tunnel model—part of it had burned through at high speed. He asked me to please keep it all hush-hush. I said, "Wait, hold it right there. This is great news. You did exactly what you are supposed to do on the ground. We want to push our models to the absolute limit. We want to push them until we have burnthroughs and things fall off; that's why we do research and testing. Don't be embarrassed about what happened. You are to be congratulated. It was a job well done."

And I think that's the philosophy that we need to encourage in the Air Force, that we are willing to break things on the ground in smaller-scale tests, so that when we actually go to build the real article, we won't have those problems.

Q

*What do you see as the linkage between the S&T activities and the JCIDS [*Joint Capabilities Integration & Development System*] process, beginning with the acquisition process?*

A

Transitioning technology is, I think, one of the biggest challenges we face in the S&T world—how do we make sure our good ideas transition into capabilities? The under secretary has actually been developing a lot of ideas, often along the same lines as some of the ideas we were just talking about: taking the risk up front, having a smooth transition path.

An important element is linking the S&T people with the operational people, or as we like to say, linking them to the pointy end of the spear. It is easy, sometimes, for the folk in the lab to lose sight of the greater Air Force picture or application. What can really help that process along is keeping those connections going; making sure that the Air Combat Command, Space Command, and Air Mobility Command people are aware of what the lab is doing and what their capabilities are.

At the same time, we have to be careful we don't err too far on the side of providing short-term solutions. The easiest way to transition technology is to focus on the short term. I need something today. Can you give it to me now? And if you can, great; I've got my transition. But if you do that, then you lose the long-term investment, and we won't have the next revolutionary technology. It is important that as we look at this transitional strategy, we've got to have a balanced portfolio. You've got to have the short-term, rapid response; you've got to have the long-term, distant investment; and you've got to have everything in between.

Q

One of the stated goals of Air Force S&T is to encourage academia to pursue Air Force-relevant problems and prepare the next generation of scientists and engineers. What is being done to recruit new talent into the Air Force S&T workforce? How is the Air Force retaining in-house expertise?

A

This is obviously a topic that is near and dear to my heart. As a university professor on loan to the Air Force, one of the great things I see in the Air Force is the recognition of the importance of training the next generation and mentorship of the workforce.

The Air Force has done an outstanding job of reaching out to the academic community and supporting research and education in areas that are relevant. Obviously, our key player in that is the Office of Scientific Research, which I highlight as one of the crown jewels in the Air Force S&T portfolio. The Air Force Office of Scientific Research has ownership of our basic research, our 6.1 portfolio. [*6.1 refers to the program element for basic scientific research, the discovery of fundamental knowledge that doesn't necessarily have a systems application at the time of its discovery. Lasers, turbine engines, and carbon fibers are the result of basic research.*] They sponsor work within the other directorates in our Lab, but they also sponsor work at universities around the country. If you look at their portfolio, it is truly phenomenal. At any given time, they're sponsoring something in the order of about 1,000 different projects. Not only do they have the greatest minds in academia working on problems that are relevant to the Air Force, but at the same time (by the very nature of academia) they are doing research and creating references in fields that are important to us in the Air Force.

A number that I like to quote: the United States Air Force, through our Office of Scientific Research, is responsible in some part for producing approximately 15,000 technical doctoral degrees in the United States every decade. That is really quite an impressive number.

But our reach goes even further than that. There are some people who point out that we train people, but what happens, they ask, if those people don't go work for the Air Force. Well, would it be the worst thing in the universe if a graduate student decided, although he or she was hired by the Air Force Research Lab, to take a job in industry or go to work for the Navy or the Army? It is still a net win for the Air Force if at some point in their careers, they are contributing to the body of knowledge that will support the Air Force, wherever they wind up working.

My graduate education was actually paid for by the Navy. I was part of the Office of Naval Research Fellowship program. Over the years, I've done work for the Navy, but when I look at it, I think the Air Force got the better part of the deal—but I hope the Navy looks at it as a net win for the Department of Defense.

I can also point to other parts of the lab that are producing really amazing things for the next generation. Case in point is the Space Vehicle Directorate, which brings in students from around the country for several research projects. There's no better way to get students involved than to give them that co-op experience. They learn all the exciting stuff that we doing in the Air Force. We know we won't catch them all, but if we catch even a reasonable percentage of them, then we've done our job.

Q

And what's the Air Force doing to retain the existing expertise in the workforce?

A

I don't directly control the manpower issues, but obviously manpower is an element of S&T health for the Air Force. We need to have a competent in-house science and technology workforce. It's true for civilians and the military. I would argue that every person involved with these positions in the Air Force needs to have some technical competence as we acquire technical systems.

When a lieutenant, a captain, or a major is presented with the latest and greatest concept, that officer needs to be smart enough to say, "You know, this doesn't quite make sense," or "This won't work," or "This doesn't really do what we need to do."

Having said that, it isn't easy to do. I'm often asked by parents of students who are interested in pursuing aerospace engineering, "How much money will my child make when he or she becomes an aerospace engineer?" And I have a standard response: "If that's the first question you ask, this probably isn't the right field for your child." We don't become scientists and engineers because we are going to get rich; we do it because it is a really exciting and fun field. So what we need to do for our in-house people is to make sure that they have fun, exciting, meaningful things to work on.

When I look at the young people coming into our Air Force S&T enterprise, they are doing things, taking responsibility, and running programs far beyond what their peers would be doing in industry. They might not be paid as well, but the level of responsibility and authority, and their ability to go out and meet other people in their field far exceed that of most of their industrial counterparts. *That* is the point we need to make.

Q

*We've seen many examples of technology going straight to the warfighter. The Predator and Global Hawk UAVs [*Unmanned Aerial Vehicles*] are Air Force examples that weren't acquisition programs. What are the current initiatives to expedite technology to satisfy our urgent needs?*

A

We have a number. I am especially excited that the Air Force Research Lab has recently stood up a rapid response team. They call this one of their core processes. It is a small group that can be tapped into to assemble the right people from across the lab and across the Air Force, if

An important element is linking the S&T people with the operational people, or as we like to say, linking them to the pointy end of the spear. It is easy, sometimes, for the folk in the lab to lose sight of the greater Air Force picture or application.

necessary reaching outside the Air Force, when some critical issue arises so that the problem is addressed rapidly.

A very recent example: the problem of helicopter brownout. When helicopters land in a sandy, dirty environment, very often they kick up lots of dust, and it makes a very dangerous situation: Just when you need your last critical navigation waypoint, you get blinded by the material tossed-up.

The Special Operations people down in Florida asked for the Lab to look at this. A team was assembled, and they said, "Okay, let's look at this from multiple layers. First, what is the quickest way we can solve this problem—not necessarily the best way, but the quickest? There are a couple of things we could do. One would be to figure out how to *not* kick up the cloud of dust; the other might be how to come up with some sort of dust-penetrating radar that could see through the cloud of dust." So they looked at those options but then said, "Wait a minute—what we *really* need is to allow the helicopter to land, which may not mean looking through the cloud of dust; it could mean taking a snapshot before kicking up the cloud of dust, then using a computer algorithm that allows the pilot to land off that snapshot. If he's 100 feet up, the terrain isn't going to change an awful lot in the few seconds it takes to descend and land."

The first time they showed it to the warfighters, they loved it, and said, "Hey, if we've got the nifty camera to take that snapshot, there are a whole bunch of other things we could do with it as well." It shows you the kind of great synergies we get when we match the researchers to the operations folk.

Q

How do the particular needs and an unusual problem like that get recognized?

A

There are several ways. One is building those ties between our S&T people and the operational people. I travel around to different areas in the Air Force to ask the questions, "What can Air Force science and technology do for you? What are your most pressing needs?" As I get answers, I try to get those people connected to the right research people.

There are laboratory liaisons at the major commands, and the major commands have stepped up to it. For example, Air Combat Command signed on to the idea of setting up a chief scientist's office when they hired someone from the Lab to become their S&T lead. They hired Dr. Janet Fender [*as the scientific advisor for Air Combat Command*], who came out of the Space Vehicles Directorate, and she has done a marvelous job of providing that connectivity. Air Mobility Command has also just hired a chief scientist, Dr. Don Erbschloe, an outstanding pilot who was once a military assistant for one of my predecessors. The Air Force Space Command had a chief scientist, but they let the position lapse; they are now looking to rebuild it. Those connections are exactly what we need.

Q

How are the seven Air Force battlelabs instrumental in implementing near-term innovative solutions?

A

The very nature of the battlelabs and their raison d'être is to address the near-term solutions. I run into some folks in other parts of the S&T community who feel a little concerned about battlelabs; they want to make sure the battlelabs don't take away parts of the Air Force mission from the research labs. I look at it in a different way: One of the things I worry about most is that the research labs not lose the long-term focus. The battlelabs relieve some of that pressure, allowing the research labs to take on those long-term subjects. The battlelabs are addressing today's subjects and primarily dealing with off-the-shelf technology and very near-term and operations-driven matters. I think their mission fits in very well with the Air Force Research Lab.

Every six months, I chair the Chief Scientist's Group, where we get all the chief scientists of the various Lab directorates and major commands, and the scientific leadership from the battlelabs together in one location to get those connections going. That is one of the key elements of my job. Case in point: we've got good connections between the UAV battlelab and the Air Vehicles Directorate of the Air Force Research Lab. It's a natural marriage between organizations that don't have overlapping missions but have very closely related missions.

Q

While lifecycle issues are normally addressed in standard acquisition programs, it is sometimes necessary to incorporate such planning in urgent technology programs such as you've just described. How is that being addressed today at AFRL?

A

Technical lifecycle issues are among our most important issues. I keep reminding people that the age of our air fleet is approaching 25 years. That is older than any other major air fleet. Obviously, lifecycle issues are important now and will be increasingly important as our air fleet continues to age. We need to be addressing those on several fronts: not only maintaining what we've got, but also looking to the future. The systems that we are rolling out today may very well be flying 50, 60, 75 years into the future, so the lifecycle has to be embedded into the design process, into our implementation of the systems.

Now here is what makes things particularly challenging. As we introduce new technology, we introduce new lifecycle terms. Take composite airplane parts. Incredible technology. But what will the impact of composites be on the lifecycle of our air fleet? I think we are just beginning to understand some of those issues. We are just beginning to understand the implications for the maintaining, not just the designing of materials like composites.

It might get back to asking some very basic questions. For example, I visited one of our maintenance depots recently, and they showed me a beautiful facility they had just built for doing depainting of some of our newer aircraft. So one of the people from the Lab who was with me asked how often you have to depaint a composite airplane. That's a good question. Maybe you don't even have to depaint a composite airplane. Maybe if you put the color into the composite from the get-go, it would never have to be painted.

One thing I worry about as chief scientist is the tendency to latch onto the latest and greatest thing. My joke as a university science professor is that if you want to get a grant from some agencies, make sure your proposal uses the words "bio," "nano," "smart," "small" or "mimetic" in the title, and you'll get your funding! Of course, when new topics come up, we want to be clever enough or innovative enough to raise them, but we also have to remember that there are established disciplines in which we must maintain our expertise. One is sustaining our aging aircraft fleet.

Q

In addition to the current lifecycle challenges and issues, you must also keep an eye on the new technologies that will shape the future. In your opinion, what are some of the key technology drivers that will shape the next 20 years?

A

I have a few favorites. The Air Force portfolio is so large, and there are many exciting things going on across the board: in the cyberspace area and in the directed energy area, for example. My own research background is in hypersonic flight. To quote the previous chief of the British Air Staff, Sir Jock Stirrup—who is now their equivalent of our chairman of the Joint Chiefs—in modern air warfare, speed is the critical issue. I think hypersonics holds the potential for giving us that capability. If I can develop hypersonic technology for flying many times the speed of sound, I suddenly have an incredible weapon capability on my hands: a cruise missile that can cross a few hundred nautical miles in a very short time.

Eventually, hypersonic technology could open the path for a more accessible reach into space. A lot of us in the Pentagon are talking about making space a lot more operationally responsive, and there are some exciting technologies to make that happen. We're looking at stuff like smaller satellites, more responsive satellites, things we can build with plug-and-play approaches. The technology is in its infancy. Some people look at small satellites and

The young people coming into our Air Force S&T enterprise are doing things, taking responsibility, and running programs far beyond what their peers would be doing in industry.

say they will never completely replace the larger capability we have today, to which I say, "Yes, that's absolutely correct. They will not." But there are technologies that will allow us to build small things that can fly quickly. They might replenish lost capabilities or augment existing capabilities. We see avenues where the cost of flying a satellite might not be much more than some of our aerial missions today.

We learned a key lesson 10 years ago. NASA had adopted the mantra of "faster, cheaper, better," but we learned we can have only two out of the three. Some of the technology we are seeing in the lab today is showing us how we can do faster and cheaper. We agree that it won't be better—but that might be an advantageous trade-off.

Another critical issue in the Air Force, probably the area that has been occupying the greater part of my time in recent months, is the issue of fuel efficiency. The Air Force is the single biggest consumer of fuel in the U.S. government. Our fuel bill is huge, and it's even worse than you might suspect because if you start to factor in the fully burdened cost of fuel, it's not just the price of the gallon of fuel, but also the cost of the infrastructure necessary to get that gallon of fuel into, say, a tanker and out the boom into a fighter aircraft over the Pacific. You start doing those numbers and you quickly realize that anything you can do to reduce fuel consumption will provide a cascade of benefits to the Air Force.

How do you do that? Several ways. First, alternate fuels. They can reduce cost and our reliance on international sources. To that end, the Air Force has flown a B-52 bomber using a manufactured fuel called a Fisher-Tropsch fuel.

Second area: propulsion. I am fond of pointing out that it is hard to imagine any machine that could be more efficient than a modern jet engine. A typical jet engine has compressors that are 89 to 90 percent efficient, turbines that are 91 to 93 percent efficient. The jet engine is far more efficient than the human body. How can you do better than that? How do you use less fuel?

We have to step back and say, "If we can't improve component by component, let's improve the system." We are seeing focused technology questions across the Air Force, especially in the Lab, addressing how we improve the jet engine as a system.

Now one obvious point is that the jet engine is a point design. When I design an airplane, I pick a propulsion plant with one primary performance goal in mind. If it is for transport, I probably want range; if it is a fighter, I want some other measure of performance, probably thrust. If I go for range, I am not going to have a very good maneuver-performing type of airplane. If I go for high performance and speed, I'm not going to have really good range. Why couldn't I have an engine that could do *both* well through a variation in its operating cycle? This is the sort of exciting technology that I think can revolutionize propulsion.

Aeronautics is a key area. Can I build a more efficient airplane? I think the answer is yes. We know of technology and approaches that would get us away from standard tube-and-wing technology: flying-wing-based technologies, like a B-2 Bomber that could yield much more efficient airframes. Some simple technologies—putting winglets [*a vertical or angled extension at the tip of each wing*] on airplanes, for instance, might be something we could do that would improve the efficiency.

Now again, we've got to be careful. We don't want to jump on a bandwagon; like anything else, if you do things like winglets incorrectly, you cause more harm than good. But we've got some very smart people that are asking these questions, and it has some very serious interest in the operational Air Force.

Q

In August [2006], you completed a quarterly review of the Air Force Research Lab with Air Force Secretary Mike Wynne. Can you give us an overview of the current status of AFRL?

A

It was intended as a review of all the neat stuff going on in the lab. It touched on a number of topics, some of which were of specific interest to the secretary, such as work in the propulsion area and fuel efficiency issues. The Air Force has declared itself an air, space, and cyberspace force. That has some interesting implications Some people think that cyber is just communications or just intelligence gathering. It's not; cyberspace is a domain, just as air and space are domains. Part of the portfolio review touched on that and the leadership role that the AFRL is taking in the cyberspace domain.

Q

I hadn't heard that about the new version of the Air Force mission including cyberspace.

A

It is now part of our mission statement. It's an area where it is extremely important that we're working together with the other Services. Cyber is a very scary domain. I know of no other area where we are so susceptible to the proverbial asymmetric warfare. One of my big concerns is that we've become so dependant on space, and we're so far ahead of anyone else, that we are vulnerable if we are not careful. In the cyber area, one of the key things is to think both defensively and offensively and to make sure those two communities are engaged. The DoD cyber environ-

EDITOR-IN-CHIEF OF *DEFENSE AT&L* RETIRES

Collie J. Johnson, managing editor and most recently editor-in-chief of *Defense AT&L* and its predecessor publication, *Program Manager*, retires effective Jan. 3, 2007, after 37 years' federal civilian service. Johnson has managed the Defense Acquisition University's flagship publication since Oct. 1, 1994, and saw it evolve from a 24-page periodical to a 120-page bimonthly magazine.

Johnson began her government career in 1969 as a GS-3 benefits clerk in the Central Intelligence Agency, progressing over the years from personnel clerk and editorial assistant, to editor, managing editor, and GS-13 editor-in-chief. She has worked in three military departments—Army, Marine Corps, and Air Force—and her career also included 9 years of government service at Ramstein Air Base and Panzer Kaserne in the Federal Republic of Germany.

Johnson attended the University of Maryland (European Division), and Saint Leo's College, Fla., and went on to graduate in 1988 from the Defense Information School of Journalism. She received numerous awards and commendations over the years, including Vice President Gore's Hammer Award in 1996 for her communications outreach efforts in support of Department of Defense Acquisition Reform.

In retirement, Johnson plans to freelance as an editor, enjoy her four grandchildren, and travel stateside and overseas. She and her husband, John, will divide their time between homes in Covington, Va., and Sour Lake, Texas.

ment will be strongly influenced by the civilian environment. As an Air Force, we would never even think about protecting only Air Force assets and relinquishing our protection of civilian assets. If we worry about the airplane that some potential terrorist might fly into the World Trade Center, so should we be applying the same thought processes to the cyber infrastructure.

Q

There is an emphasis in the USAF to solicit an outside perspective to foster innovation and prevent technical inbreeding. You've stated that the key to successful innovation is a system of quality checks and mechanisms for bringing fresh ideas from outside the organization, for example from studies done by the Scientific Advisory Board. How are organizations outside the Air Force able to contribute ideas that are relevant and timely for your specific needs?

A

One of the many great and ingenious ideas of Hap Arnold was the understanding that in order to remain honest, you need to have an outside view. The very nature of my office is to have an outside perspective. But there is a catch to that: If you don't seek out the right outside advisors, or if you don't bring the advisors up to speed, then their points of view can become irrelevant. I think the Air Force does a phenomenal job in balancing the need for outside advice with the importance of bringing in people who understand what we do.

The Scientific Advisory Board is my best example of that. For a minimal investment (it is embarrassing, actually, how little we invest in the Scientific Advisory Board!), we get 50 of the most brilliant scientific minds in America. We bring them in, we teach them what the Air Force does, they learn what some of the acronyms mean and a little about Air Force programs—but we make sure they never lose that outsider's perspective.

There are other sources that we rely on, of course. For example, Rand Corporation does studies for the Air Force. There's even a National Academy board, the Air Force Studies Board, that serves a slightly different role, as they report directly to Congress. The interesting thing about the SAB is it reports directly to the chief and the secretary of the Air Force. It provides them a sounding board.

If you look across the range of government advisory boards, some that started as technical boards have crossed more into the policy issues. One of the great successes of the SAB is that we've managed to resist that.

I'll also brag about the fact that when I look at the many advisory boards I've served on, I know of none that has had a bigger impact on its parent organization than the Scientific Advisory Board. No other board's studies are read as thoroughly as our SAB studies.

Q

There is a desire to leverage testing and evaluation and S&T so that they work hand in hand, for example by sharing testing facilities. How is this a shift from the roles they've traditionally held?

A

The reality is that on some occasions, the T&E community was at odds with the S&T community. I think there was an erroneous impression that there was competition for resources. In recent years, thanks to smart leadership, we've almost erased that notion. There is a very strong effort now that links researchers directly with the testing and evaluation people.

At times, T&E folks can be a tremendous resource for S&T. If you're calibrating a wind tunnel, why not calibrate it with a model that is actually going to teach you something? One of the successes I can point to, one of our most prized test assets in the Air Force, is the Hypervelocity Wind Tunnel 9. It's a hypersonic wind tunnel that can simulate flight speeds up to around 16 times the speed of sound. The Tunnel 9 leadership has been pioneering the idea of bringing in university people. They've got students running all around the wind tunnel, working on undergraduate and graduate projects that have direct input to tests in the tunnel. Students are being educated, they are building the technology—and oh, by the way, it is a net win for the T&E and S&T communities.

This also means we need to be doing our planning in acquisition with both the S&T and T&E communities in mind. I mentioned that hypersonics is one of my favorite areas. But I can't just think about how I will experiment with that technology; I also have to think about how I will test it as it becomes available. That means ground test facilities, possibly flight test facilities. All those people have to be talking together; and the good news is, they are.

My third month in this office, in November of 2004, I went to the first Air Force Testing and Evaluation conference in California. It was a group of people from the Air Force Flight Test Center at Edwards Air Force Base and a group from the Arnold Engineering Development Center talking to each other. No one else. By my count, there were exactly two of what I call science and technology papers presented there. Fast forward to one year later: The next time they had that meeting, they had so many science and technology people attending, it was a joy to behold. And I see more T&E folks at our basic research meetings now. That dialogue is under way.

Q

I'd like to end by asking you about the X-vehicles; that is, aircraft and vehicles designed for experimental purposes to provide the Air Force a way to do research from the sky. Since 1995, 16 X-designations have been made, and more are expected. It has been said that X-vehicles can reduce acquisition risk up front. Can you talk more about X-vehicles, their potential for the Air Force, and how they figure into the procurement process?

A

The notion of X-vehicles, if properly executed, truly embodies what we discussed earlier: the idea of doing experimentation, not demonstration, and having a list of questions we want answered, instead of things that we are trying to prove at the starting gate.

A couple of examples come immediately to mind. We have a program that used to be called the Scramjet Engine Demo and is now the X-51, which will be a high-speed X-vehicle platform. The Air Force Research Lab, working with NASA, just got an Active Aeroelastic wing-vehicle designated the X-53, embodying that notion of the X-vehicle, where we take our risks and try our technologies. Aeroelasticity is the study of how air interacts with an aircraft structure; for instance, preventing an airplane wing from fluttering or breaking off. But this X-53 program is actually looking at how we can use active control of the structure to use the fluid/structure coupling and engineer the aircraft performance. It's the perfect thing to test with an X-vehicle—you wouldn't want to implement this on an operational system until you see if it works and learn more about it.

One of the things I've been encouraging in the Air Force is the X-vehicle concept. And by the way, we are using X-vehicles not just in our atmosphere; their use also extends into space. We've got a series of small satellite experiments called TacSat with other DoD partners, and I view TacSat as being the X-satellite. TacSat is not a delivered production capability. I don't look at it and say, "Okay, that works. Let's build more." Instead, it is an experimental platform where I can try the technology and see if it fits into our area of operations. Just because you have technology doesn't mean it is useful. X-vehicles allow us to try out how that technology works before we make a final decision.

Q

Dr. Lewis, thank you for being so generous with your time and for sharing your insights. Is there anything you'd like to add?

A

I've had two chiefs of staff now tell me that I have the best job in the Air Force. I agree with them. I get to tell the chief of the Air Force, "I am interested in this or that; I think this or that is important." And then I get the go-ahead: "Look into it for me." It is an amazing opportunity.

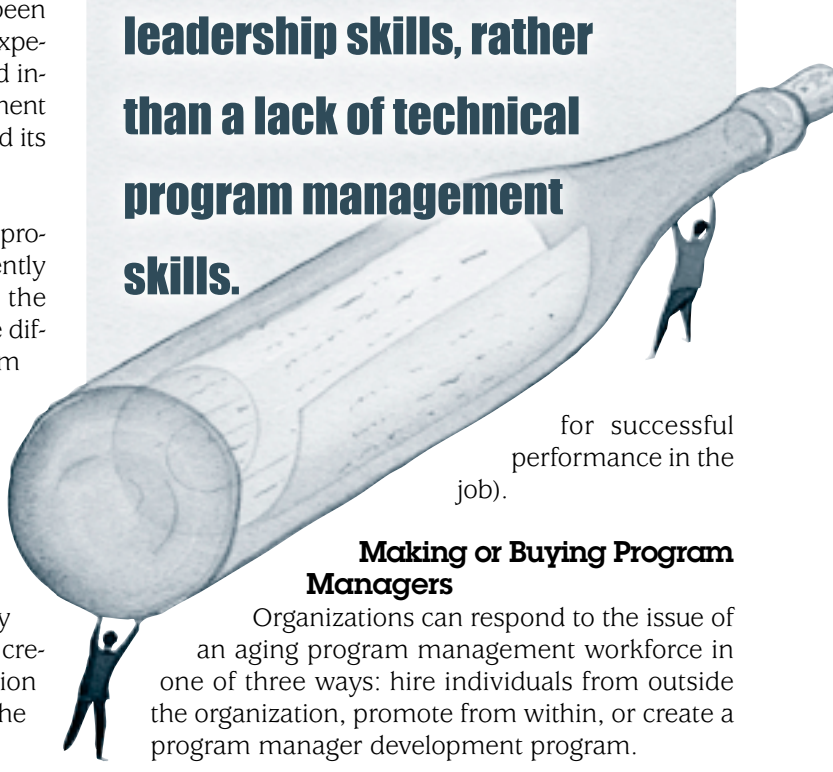
Developing Future Program Leaders: Part I

Timothy S. Kroecker

Many large corporations with high profile and major, multi-billion dollar programs are facing the same crisis that the federal government has been trying to address for nearly a decade now: Program leaders and senior project managers reach retirement age, leave, and take with them thousands of hours of accumulated knowledge, experience, and wisdom. In the corporations that have focused on program leadership development for succession planning, promising individuals receive technical training for high-responsibility program management positions, but they may, nevertheless, lack the depth of experience or leadership capability required to be effective in these positions. In organizations where leadership development has not been a priority, the lack of training, along with the gap in experience, will likely lead to the promotion of unprepared individuals and eventually, cases of serious mismanagement of resources. The end result costs the corporation (and its customers) millions of dollars.

Organizations need to focus on building the technical program management skills of their employees to efficiently manage programs, but they also need to focus on the leadership skills (a.k.a. "competencies") that spell the difference between success and failure. Few with program management experience can refute that many projects and programs falter because of lack of communication, lack of people skills, or lack of leadership skills, rather than a lack of technical program management skills. When a project or program stalls, it is often the leadership skills—the ability to re-create and communicate a vision, and to motivate others with that vision—that revitalize it. To truly create the highest performers, organizations should create learning opportunities that combine the application of technical program management skills along with the softer skills involved in people management.

Many projects and programs falter because of lack of communication, lack of people skills, or lack of leadership skills, rather than a lack of technical program management skills.



In this first of a three-part series to address the need to capture the expertise of the existing workforce and develop the next generation of program leaders, I will discuss the business case for doing so, define project and program management, and explore the concept of competencies (i.e., the knowledge, skills, and abilities required for successful performance in the job).

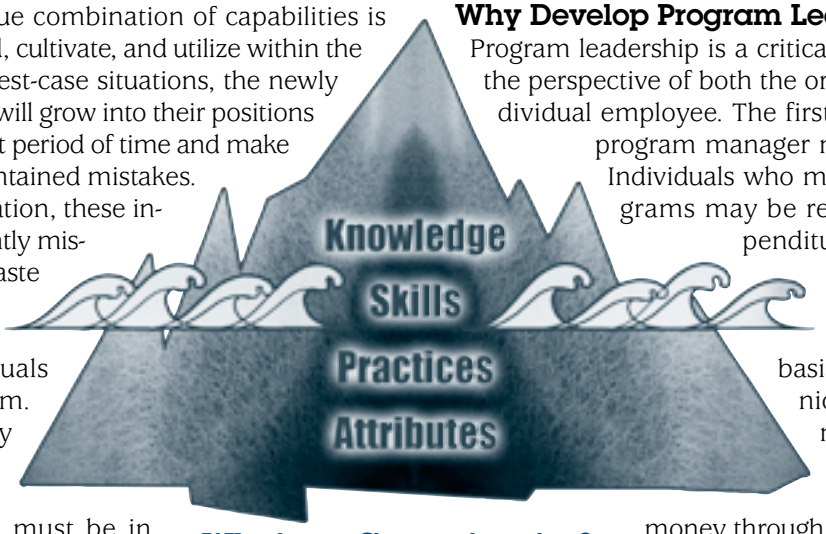
Making or Buying Program Managers

Organizations can respond to the issue of an aging program management workforce in one of three ways: hire individuals from outside the organization, promote from within, or create a program manager development program.

When faced with high-profile program manager openings, organizations often promote individuals from within the project manager ranks, for very good reasons: They are familiar with the organization and have outstanding technical project management skills. However, dealing with high profile, high-stakes programs often calls for a

Kroecker *designs programs for the assessment and promotion of project managers to program managers in a variety of organizations and has a doctorate in industrial/organizational psychology.*

deep appreciation of how to get things done within an organization as well as within the customer and/or industry, combined with a deft touch for handling senior executives. This unique combination of capabilities is difficult enough to find, cultivate, and utilize within the organization. In the best-case situations, the newly promoted individuals will grow into their positions within a relatively short period of time and make only minor or well-contained mistakes. In the worst-case situation, these individuals will significantly mismanage a program, waste valuable time and resources, and demoralize the individuals working on the program. In order to successfully promote from within the organization, a developmental process must be in place to introduce key individuals to the key leadership capabilities, provide "safe" opportunities to develop any critical skills they may lack, and then assign them successively more intense, complex programs to manage.



What are Competencies?

Another option that organizations can use to fill key openings is to hire individuals from the outside, particularly individuals transitioning out of other program manager or senior-level project manager positions within the military, Department of Defense, customer and supplier organizations, or competitor organizations where job responsibilities and the work environment are likely to be similar. This is often an effective way to bring in the most competent, skilled, and qualified individuals available. It is also an effective way to bring a new or fresh perspective to an organization. However, organizations that use this strategy need to explain the rationale for recruiting individuals from the outside or they risk losing their own "stars," who may feel overlooked or believe their career options are limited.

Rather than recruiting from the outside or hoping to find a qualified internal candidate for a program leadership role, a more effective approach is to create a project-to-program manager development program that raises the overall leadership capabilities while also identifying the most qualified individuals for key positions. Creating this development program involves:

- Establishing a shared understanding of the responsibilities, tasks, and challenges of the role; and articulating the knowledge, skills, or abilities (competencies) required for successful performance in the program manager position
- Creating training programs and/or experiential assignments designed to develop these necessary competencies
- Selecting the appropriate assessment and development approach throughout the process.

Why Develop Program Leaders?

Program leadership is a critical skill to develop from the perspective of both the organization and the individual employee. The first reason is the cost of program manager mistakes or mis-steps. Individuals who manage the largest programs may be responsible for the expenditure of anywhere from thousands to hundreds of thousands of dollars on a day-to-day basis. Even the best of senior program managers make some errors that can cost the organization huge sums of money through the misassignment of individuals to tasks, unanticipated scheduling difficulties, inability to influence powerful stakeholders, or a host of other difficulties. By increasing the skills of current and future program managers, organizations will mitigate mistakes and save time, money, and other resources.

The second reason to develop program leaders is to help separate leadership capabilities from technical/functional project management skills. Individuals who have outstanding technical project management capabilities are often promoted to senior-level positions where there is still a need for technical expertise but also a greater emphasis on the softer people skills. Individuals with no training or past experience with the non-technical skills often fail in the new, quasi-technical program manager positions.

Developing program leadership skills is also important from the individual employee's perspective. Project managers, like most people, are looking for more interesting and challenging work. By developing their program leadership capabilities, they are more likely to receive stewardship of key programs or initiatives. In addition, project managers are also interested in pursuing those roles that are more financially rewarding.

Project and Program Management Defined

Because of the unique nature of the field of project and program management and the sometimes confusing interchanging of the two terms, it is necessary to define them clearly to understand the responsibilities that fall within each category. Each company, professional association, and organizational function is likely to define these terms somewhat differently. For the purposes of this series of articles, *program management* should be thought of as having the responsibility for the conceptu-

You're the Judge

Joe G. works in a small government office with five other government employees, three of whom are detailed from the military departments. Joe G. and his office-mates (one of whom is Bob M., active duty military) routinely serve as contracting officer technical representatives on contracts to obtain services in support of their work. A contractor who has done business with Joe's office decides to host a four-course celebration dinner with an open bar to recognize the contractor's 20 years of operation. After several months of planning and announcements of the upcoming event, the contractor invites Joe and his office-mates, as well as hundreds of other guests including other government personnel, contractors, and competitors. *Should Joe and his colleagues attend the dinner?*

Bob is detaching from the office after an almost four-year tour and moving to a new assignment at a very large organization that doesn't do business with the party-hosting contractor. *Should Bob attend the dinner?*

The verdict is on page 46.

alization, efficient management, and delivery of a large-scale, high-budget, key product or strategic initiative for the organization. Program management involves working with senior-level executives within the internal and customer organizations. It requires a sophisticated understanding of organizational dynamics and how to influence key stakeholders. For the purposes of these articles, *project management* is considered to mean having the responsibility for the efficient management and delivery of a subportion of a program. Project management involves managing a team of individual contributors and has a greater focus on the more functional project management skills.

Understanding the Role

To create a reliable program manager development program, an organization must first have a clear and thorough understanding of the position or positions involved. This understanding allows organizations to articulate the tasks performed, the types of decisions typically made, the significant challenges of the position, and the level and type of competencies required to successfully perform within the position.

To develop this understanding, an organization should conduct data-gathering interviews or focus groups with

Krieg Issues Updated "Acquisition of Services" Policy Memorandum

Under Secretary of Defense (Acquisition, Technology and Logistics) Ken Krieg has issued an "Acquisition of Services" policy memorandum effective Oct. 2, 2006. Krieg's latest policy memorandum complies with Section 2330 of Title 10, U.S.C., as amended by Section 812 of the National Defense Authorization Act for FY 2006, which requires the establishment and implementation of a management structure for the acquisition of services in the Department of Defense. It is intended to ensure that acquisitions of services support and enhance the warfighting capabilities of the Department of Defense and achieve the following objectives:

- Acquisitions of services are based on clear, performance-based requirements.
- Expected cost, schedule, and performance outcomes are identifiable and measurable.
- Acquisitions of services are properly planned and administered to achieve outcomes consistent with customer's needs.
- Services are acquired by business arrangements that are in the best interests of the Department of Defense and are in compliance with applicable statutes, regulations, policies, and other requirements, whether the services are acquired by or on behalf of the Department of Defense.
- Services are acquired using a strategic, enterprise-wide approach, which is applied to both the planning and the execution of the acquisition.

The updated policy memorandum supersedes the "Acquisition of Services" memorandum issued on May 31, 2002, and Enclosure 8, "Acquisition of Services," to DoD Instruction 5000.2, dated May 12, 2003. Read Krieg's memorandum in its entirety at:

<http://akss.dau.mil/docs/2006-3064-ATL%20Complete.pdf>.

key stakeholders/senior executives, incumbents, and their managers. Key stakeholders or senior executives are interviewed to gather their perspective on the job, to gain an organizational context for the importance of the job, and to inform them of the project and to garner support for it. High-performing, senior, project and program managers are interviewed to gather the specifics of their work: the responsibilities, challenges, resulting work products, and ways to measure successful performance. It is important to interview individuals from both of these groups to gain an understanding of what the jobs have in common and what distinctions there are between them. Job descriptions and existing training curricula should be reviewed to glean this type of information as well.

When seeking to understand the program manager role and the necessary competencies, organizations need to think not only about the current challenges and requirements of the job, but also try to anticipate the challenges and requirements over the next three to five years. It is also important to think more about the position itself (i.e., what is the job?) rather than one specific individual who holds it (i.e., what kind of person is in the job?). By understanding the key tasks and challenges of the program manager, and—most important—the competencies required to be successful within it, an organization can create a career development framework with training and development programs focused on addressing the principal job challenges.

Organizations can hire individuals from outside the organization, promote from within, or create a program manager development program.

Defining Required Competencies

Before articulating the competencies for a specific role, it is necessary to have a basic understanding of competencies. In general, competencies are the knowledge, skills, practices, and attributes that are related to superior performance in a role. *Knowledge* can be defined as the usable and accessible subject-matter content gained through education and experience (e.g., knowledge of quality control processes and financial acumen). *Skills* are reliably repeatable behaviors applied to specific tasks (e.g., using software or e-mail). *Practices* are behaviors that translate into effective performance when carrying out key tasks and responsibilities (e.g., leading by example, keeping the team informed). Practices are also the specific area of know-how that the senior, most experienced people will take with them when they retire. Finally, *attributes* are qualities of the person that are characteristic of him/her and which often will not change much over time (e.g., initiative, drive, or need for achievement).

Knowledge and skills are trainable, as long as the individual has the aptitude and interest in acquiring them. Attributes are generally not trainable; therefore, they tend to be used more effectively as selection criteria when recruiting or promoting. Practices are trainable, as long as the person has the attributes needed to demonstrate the behavior effectively over time. (For example, the practice of keeping people informed is unlikely to be sustained over time if the person lacks the initiative to do it when the situation does not explicitly call for it.)

A complete competency model of program managers includes all of the above components. However, the majority of the competencies should be focused on practices because practices are developable; practices are observable—it isn't possible to assess what can't be seen; and practices have a more direct link to getting results in the job than attributes—that is, they are "face-valid" to project and program managers as well as senior executives.

As the graphic on page13 suggests, if one could consider personalities and behaviors as an iceberg, skills and knowledge are above the water line and easier to assess/measure. But as individual behavior is translated in corporate effectiveness or practices, and interpreted as personal attributes, it becomes less easy to see clearly or define—and, therefore, more difficult to measure or assess.

Part II will more thoroughly detail the process of creating a complete understanding of the program manager using a "Success Profile" structure with the required competencies, and the challenges involved in defining program versus project management. Part III will explore the alternatives available when creating a program manager development program.

The author welcomes comments and questions. Contact him at tkroecker@cambriaconsulting.com.

Program Startup Workshop

The CH-53K Heavy Lift Helicopter Program

Col. Paul Croisetiere, USMC ■ David Haines ■ Duane Mallicoat

Expeditionary warfare planners and strategists faced a dilemma: The extraordinarily relevant but aging CH-53E "Super Stallion" helicopter would not have the performance required to move the heavy equipment of the Marine Expeditionary Brigade of 2015 deep into the littorals in one period of darkness. Additionally, fatigue life expenditure and a lack of investment in reliability improvements had created significant in-service inventory issues and high operations and support costs.

The solution: a derivative design of the CH-53E (the CH-53K) that integrates existing technology to allow the Marine Corps to lift armored vehicles up to 15 tons out to a distance of 110 nautical miles at Navy "High-Hot" conditions (3000 feet, 91.5 degrees Fahrenheit). Moreover, survivability, force protection, and interoperability improvements would be designed in from the start. Supportability design choices and a cost-wise sustainment strategy would result in an affordable heavy-lift helicopter.

CH-53K Program Startup

After Under Secretary of Defense for Acquisition, Technology and Logistics Ken Krieg approved entry of the Marine Corps' CH-53K program into system development and demonstration in December 2005, the government awarded the CH-53K system development and demonstration cost-plus award fee contract to Sikorsky Aircraft Corporation in April 2006. As the program moved towards contract award, the leadership of the H-53 Heavy Lift Helicopters Program Office, PMA-261, anticipated the need to step program execution off on the right foot, particularly with respect to integrating organizations and establishing effective communications. The first step was to contact the Defense Acquisition University to leverage their considerable experience in organizational development and major acquisition program management. DAU's recommendation: conduct a program startup workshop (PSW).

What is a Program Startup Workshop?

Today's programs are a partnership between the government and industry. The success of the program can be attributed, in large part, to the successful integration of these two segments into one cohesive team.

Today's programs are a partnership between the government and industry. The success of the program can be attributed, in large part, to the successful integration of these two segments into one cohesive team.

The PSW's purpose is to improve the execution of programs as they progress through the acquisition process by fostering the formation of that cohesive team. The workshop is viewed as the foundation for developing trust and effective communication for the entire team. DAU can facilitate the workshop and specifically tailor its scope to the program. The duration is sized to the outcomes that the program manager desires from the workshop: the range is usually 2½ to 4 days.

We have all heard that one never gets a second chance to make a first impression. This is true more than ever in today's major defense acquisition programs. Accordingly, the PSW is typically scheduled no later than 30 to 90 days after contract award. Experience shows 30 days is optimal, but the PSW can be held at other times to meet program needs.

Croisetiere *is the H-53 program manager, with responsibilities that span the CH-53K program and in-service support of 217 H-53 helicopters.* **Haines** *is the CH-53K program manager at Sikorsky Aircraft Corp.* **Mallicoat** *is a professor of systems acquisition management and life-cycle logistics for Defense Acquisition University Mid-Atlantic Region and was the lead facilitator for the PMA-261 Program Startup Workshop.*

What Types of Activities Make up a Workshop?

The agenda of the workshop is driven by the PM, but previous workshops contain common topics that include, but are not limited to, seamless organization plan and processes, effective communication plan, common team goals, common team vision and sub-team charters, joint "single metrics," and risk-management process. PSWs also foster invaluable team building between industry and government teammates.

Engineering Drawing of the CH-53K

Artist's rendering courtesy Sikorsky Aircraft Corporation.

How Can a PSW Benefit *Your* Program?

The typical outcome from a PSW has been to help build a cohesive team where all members are aligned to the program goals: one team, one playbook, and one vision. There are benefits for each stakeholder, and crafting a tailored, facilitated approach can result in noticeable leaps in program organization and efficiencies. Classroom scenarios are supplemented with lessons learned from current programs.

What are the Challenges to a Successful Workshop?

Challenges are part of any new program, but they are not necessarily a negative aspect. In the case of the PSW, the biggest hurdle for the government PM is to anticipate, in concert with the industry PM, significant challenges to program execution and to ensure those risks, issues, and opportunities are considered during the workshop.

As DAU's experience with PSWs has grown, the common challenge to emerge has been structuring the PSW to accomplish program needs. The hardest aspect is often identifying the critical goals that must be accomplished during a PSW and then fitting those goals or tasks within the allotted time. Using the agendas of other PSWs as a baseline is a good starting point, but each PSW must be tailored to meet specific program requirements. The challenges then become opportunities for both the government and industry as they build their joint seamless team.

The CH-53K PSW

The team that organized this June 2006 event consisted of senior leaders from Sikorsky, PMA-261, and DAU. We established four major goals for our PSW:

- Produce critical program startup products, such as team charters, a communication plan, and identification of critical program challenges.
- Educate the joint program team on institutional requirements unique to the government (defense acquisition executive summary, selected acquisition report, acquisition program baseline, etc.) and Sikorsky (corporate vision and goals, program objectives). Additionally, a detailed brief was provided on the require-

The program startup workshop's purpose is to improve the execution of programs as they progress through the acquisition process by fostering the formation of [a] cohesive team.

Statement Required by the Act of Aug. 12, 1970
Section 3685, Title 39, U.S.C.
Showing Ownership, Management, and Circulation

Defense AT&L is published bimonthly at the Defense Acquisition University (DAU), Fort Belvoir, Va. 22060-5565. The university publishes six issues annually. The director of the DAU Press is Eduard Boyd; the editor in chief is Collie Johnson; the managing editor is Judith Greig; and the publisher is the Defense Acquisition University Press. All are collocated at the following address:

DEFENSE ACQUISITION UNIVERSITY
ATTN DAU PRESS
9820 BELVOIR RD STE 3
FT BELVOIR VA 22060-5565

AVERAGE NUMBER OF COPIES EACH ISSUE DURING THE PRECEDING 12 MONTHS

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A PSW is a valuable program management tool and can contribute to accomplishing critical start-up tasks for acquisition execution.

ments for the integrated baseline review, the first contract milestone the program team would tackle.
- Educate the team on new acquisition concepts and best practices, such as opportunity management, risk management, and the establishment of relevant metrics.
- Continue to build an environment of teamwork, trust, collaboration, and effective communication.

All PSW participants completed critiques and provided insight on the events that provided best value for the team. The team identified the most valuable aspects of the PSW to be:
- Teaming with their industry/government counterparts. Surprised this ranked #1? Teammates spent much of the workshop seated next to or across from each other, discussing program challenges and getting consensus on team charters. For many, this was the first opportunity to share strategic program considerations. Moreover, teammates had the opportunity to listen to differing points of view. All recognized that effective communication and trust will be required to work through the challenges that present themselves within this program. Program leaders were pleasantly surprised that the team saw this teaming opportunity as the most valuable aspect of the workshop.
- Charter working groups. Development of team charters is where most of the detailed work was accomplished. While the participants had worked together for several months, most did not have the opportunity to properly define structures, processes, and plans for their integrated product teams. This particular activity was regarded as one of the better investments made during the PSW.
- Opportunity management. This is a relatively new acquisition concept or best practice that few on the team knew about. The PSW provided the perfect environment for the team to brainstorm on how to exploit potential program opportunities, particularly in the context of a cost plus award fee contract. This valued activity highlighted the benefit of having DAU participation in this event—DAU brought good ideas and emerging policy into early program execution.

Follow-on Workshop

There was general consensus among the joint CH-53K team that the PSW was a valuable event, with discussion regarding the merits of follow-on events at critical points during contract execution. Follow-on events to the PSW could allow the team to refine relationships, update team charters, and review program challenges. Possible topics and activities identified by the team for a follow-on workshop event include:
- Discuss issues and challenges that lie between the system functional review, preliminary design review, and critical design review.
- Improve communication processes for individual integrated product teams.
- Refine and improve team charters.

The CH-53K program team will conduct future workshops or management meetings to discuss these and other topics. With DAU now a stakeholder in the CH-53K process, the program will aggressively work to leverage DAU's early involvement in the program in future program workshops.

What's in it for You?

A PSW is a valuable program management tool and can contribute to accomplishing critical start-up tasks for acquisition execution. We cannot overstate the importance of taking time to get the entire team together, away from the routine of managing a program, to focus PM efforts at a strategic level. It is time very well spent. One major lesson learned was that charter development is very time-intensive, and adequate time must be budgeted within a workshop to accomplish this specific goal. Most important, one can never underestimate the benefits of teaming opportunities, especially between government and industry.

So can the PSW be a benefit to your program? Absolutely! Is it a cure-all? Absolutely not. What it can do is offer some great opportunities for joint team building and the establishment of common program goals and policies. The PSW is gaining popularity as a best practice for DoD acquisition programs and is another resource available to the PM to maximize program efficiencies and effectiveness throughout the acquisition life cycle.

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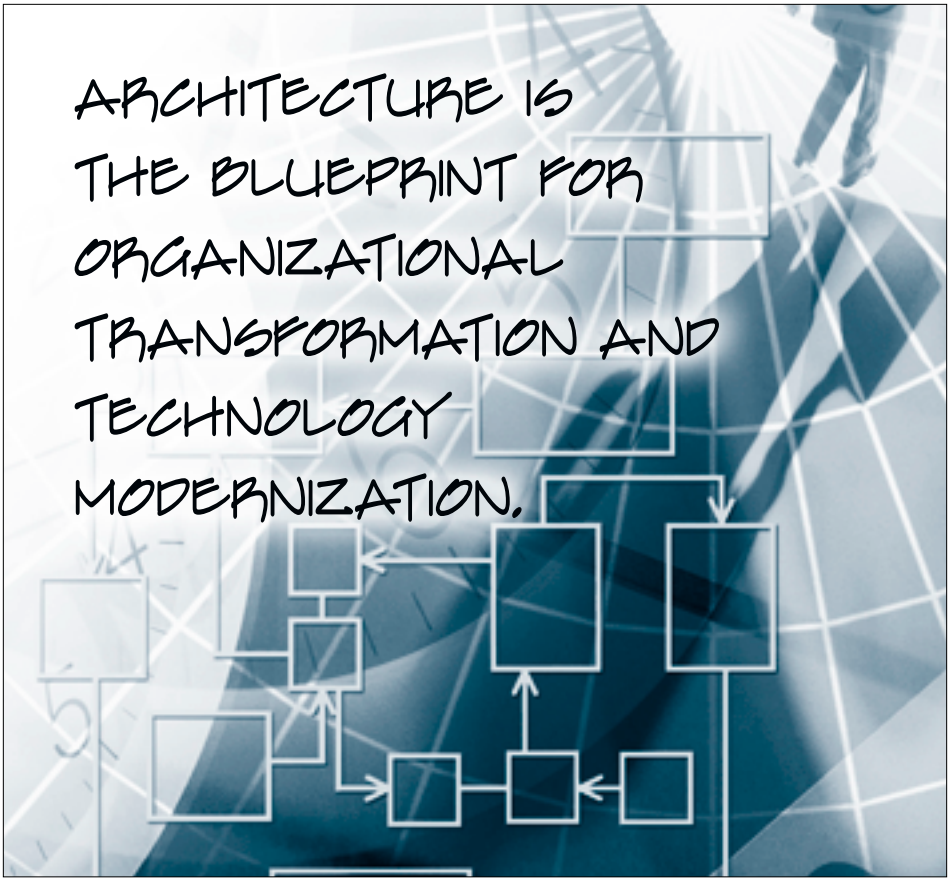
Securing Strategic Benefit from Enterprise Architectures

R. Suter



The goal of Enterprise Architecture is to improve the efficiency of capital investment in all its forms: human/intellectual, organizational, and technical. In part, it does so by providing the information needed to implement shared services across the enterprise (i.e., implement a service-oriented architecture). However, achieving these goals entails a great deal of collaboration, coordination, and senior executive commitment; strong governance; customer ownership of the architecture; disciplined processes and methods; configuration control over architecture artifacts; a financial structure providing incentives that encourage an agency-wide view of modernization and transformation; and realistic schedules.

The success of architecture's contribution to modernization and transformation can be measured in terms of a return on investment. About 80 percent of that return results from improvements in process cost savings, labor cost savings, and supply chain efficiencies identified by the architecture. Indeed, technology investments alone, unguided by architecture and divorced from the larger investment context, show no such favorable return.

How Architecture Earns Its Keep

Architecture is the blueprint for organizational transformation and technology modernization. It enables the systematic identification and management of the factors contributing to:

- The control of unnecessary variations in data and information schemas, which drive poor data quality and thus preclude achieving "clean audits" and "system-of-record" capabilities
- Cooperative engagement
- Total cost of ownership (TCO) [or total ownership cost (TOC) as it is also known] drivers
- The reuse of information technology, organizational, and intellectual capital (i.e., knowledge management) assets
- The flexibility needed to deal with unforeseen situations
- Interoperability
- The identification and management of information concerning the location, distribution, and interrelationships among data elements, metadata schema, their usage and ownership
- A detailed presentation of the future-state (to-be) state of an agency
- The duplication and gaps in technology, data elements, processes, procedures, policies

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- The establishment of accurate baseline cost and schedule estimates
- The standards, practices, and agreements essential to enterprise-wide solutions, as opposed to point solutions (i.e., stove-piped architectures focused on the functional needs of specific business units)
- The formulation of trade-offs among design, cost, schedule, and performance constraints
- The assessment of impacts to the agency mission generated by changes in its investment portfolio, thus enabling capital planning investment control (CPIC)
- The alignment of data management/business intelligence system requirements with agency goals.

The objective is to develop "just enough" architecture to implement these capabilities and not deliver an overly developed, but poorly focused architecture product. Such a product would serve only as a blueprint for yet another instance of the information productivity paradox—that is to say, a blueprint for technology investments that fail to improve productivity because they would be divorced from business needs.

To avoid this pitfall, the architecture team must bridge the gap between the strategic modernization objectives and the tactical objectives that provide immediate value to customers. Closing that gap creates a sense of customer buy-in that will become eventual ownership of the architecture—a critical success factor in organizational transformation and infrastructure modernization.

Closing the Gap: Tactical Recommendations

Developing products of strategic value (e.g., a CPIC-based portfolio of modernization projects aligned to the agency mission; the integration and interoperability of systems; the reuse of resources, assets, and capabilities) also generates a range of artifacts of immediate tactical value for the customer.

For example, one strategic benefit of architecture is a roadmap to agency-wide interoperability. To construct that roadmap, architecture developers need a thorough understanding of an agency's inventory of hardware and software assets and their deployment. Unfortunately, that inventory is often highly fragmented and incomplete. One step to closing the gap between tactical and strategic objectives is to implement an integrated inventory that satisfies both strategic architecture objectives and tactical objectives. The latter will enable the customer to consolidate multiple redundant individual licenses into single agency-wide licenses, thereby significantly reducing expenditures for those licenses; to significantly reduce problem resolution time and error rates experienced by desk top support; and to renegotiate, consolidate, and significantly lower the cost all of service-level agreements. These results do much to secure customer buy-in, and they emanate from recommendations such as those that follow.

Ensure the commitment of senior leadership to the Enterprise Architecture, without which there is no basis for sustaining an architecture project.

Ensure that stakeholders understand their responsibilities and that their concerns and issues are fully communicated and understood.

Facilitate open and timely dialog, which is a characteristic of organizations with high capability levels—as defined by the Capability Maturity Model-Integrated (CMMI), agile methods, or other best practice regime. A key benefit is fast feedback that is essential to risk reduction, accountability, and governance, which are fundamental to managing the complexity and volume of communications entailed in information technology modernization and organizational transformation. Which framework is chosen is less essential than the fact that a disciplined, repeatable process is in place to provide the level of coordination required. Indeed, without disciplined processes for dealing with the often-conflicting priorities of developers, stakeholders, and customers, project control will be diluted and resources misallocated.

Integrate the architecture development plan with the portfolio spend plan (i.e., ensure traceability between every component of the respective plans, thereby making the consequences of changes in one plan immediately visible in the other). This also facilitates satisfying Clinger-Cohen, and CPIC requirements.

Ensure that system life cycle plans and program baselines are in place to manage the information technology investments that flow from the architecture-based transition planning. By enabling the development of realistic schedules, the baselines improve the likelihood that the enterprise architecture will provide the detail required of an integration blueprint; and provide a benchmark for monitoring program performance, without which cost, schedule, and performance deviations will be neither identifiable nor measurable.

Regularly schedule architecture reviews. They will serve as control gates for assessing progress with respect to project performance, risk, requirements stability, quality, cost, schedule, and configuration management. And they are, of course, an important means to communicate with customers and stakeholders.

Implement an architecture project Web site to provide project status information; a forum for comments and suggestions by team members, stakeholders, and customers; and, most important, a portal through which cus-

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21st Century Project Management Competencies

Wayne Turk

Let's talk about the 21st century for a minute. A few years ago, anyone mentioning the 21st century was either talking about the seemingly distant future or science fiction. It is not the future any more, but the here and now, and the 21st century program manager needs a whole new portfolio of competencies.

In the beginnings of project management, back when dinosaurs roamed the backyard, there was no training for PMs, no certifications, no professional organizations; the only requirement was to get the job done. Project management has even been called the "accidental profession" because people just stumbled into it. They were picked to run a project and had to learn by trial and error. And there were lots of errors to learn from.

But as people began to share information, project management slowly became codified and more organized, and good practices were noted. Professional organizations like PMI (the Project Management Institute) came into being. Professional courses were developed. Seminars and conferences began to be held. Schools began to teach project management. In fact, schools like the Defense Acquisition University were developed to teach best practices and prepare PMs and those in associated fields to run successful projects. We saw the first vestiges of certifications; however, certifications of any kind were the exception rather than the rule. These days, however, more and more certifications are available—and sometimes required.

Professional Certifications

Admittedly certifications are only one measure of competency, but they are a visible and tangible measure. Certifications show that a person has met certain requirements and can be depended on to have specific skills and knowledge. Government agencies are in a state of flux as far as certifications go; sometimes they are required, and sometimes they aren't. As is so often the case, different government agencies are going in different directions. Even the rules in DoD are changing.

Congress provided guidance for DoD through the Defense Acquisition Workforce Improvement Acts. Because of DAWIA and DAWIA II, DoD is both constrained in what it *can* do and encouraged (read "directed") toward what it *must* do for a more professional and streamlined workforce. DAWIA begat the first requirements for PM certifications in DoD. While certifications are still required for some DoD PM positions, more flexibility on tenure and requirements for years of experience has been added

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under DAWIA II. The primary goal of both acts is in the name: Acquisition Workforce Improvement. I won't make the usual comments about getting more help than we need from Congress because the goal is admirable ... and the help is needed in this case.

DoD certifications come primarily from DAU training courses, after which people are certified at different levels: Level I – Basic; Level II – Intermediate; and Level III – Advanced. The Air Force Institute of Technology and the Naval Postgraduate School are also good sources of professional education for the PM in search of relevant degrees, certification, and continuing education.

Other agencies, most notably NASA and Health and Human Services, have instituted requirements for certifications in some cases. They are also providing training to help with those certifications. Most other agencies either haven't instituted requirements for certification yet, or their initiatives are still in the embryonic stage.

In and outside of government, the PMI certification of Project Management Professional (PMP) is probably seen by most as the gold standard. PMI has been acknowledged as the leader in the field and has more than 200,000 members, representing 125 countries. It sets a level of required expertise and professionalism that is recognized nationally and internationally in its PMP certification. Dozens of companies and organizations provide courses and help for individuals to achieve PMP.

It is not just in the United States that there is a movement toward required certifications. Many other counties, including Australia, Canada, Japan, and the United Kingdom are on the certification bandwagon.

Certification requirements for more positions are probably just over the horizon. PMs, and those who want to be PMs, need to start preparing for them. But they are just one measure, just one of the competencies that are—or may be—required in this new century.

Practical Competencies

As a PM, you have to manage:

- People—your team and those associated personnel who sometimes work with you; upper management; the end users; the vendors; and everyone else who is a stakeholder.
- The financial intricacies—both what you plan to spend and what you do spend (often seemingly unrelated to each other).
- The schedule—the project schedule and all the individual tasks that are part of it.

Each of these areas requires somewhat different, but related, management competencies.

Managing People

Good project management requires good people-management skills. New managers frequently have few, if any, people-management skills and usually aren't really trained in managing. Upper management too often believes that if a person has great technical skills, then he or she can manage—and too many projects have problems because that isn't the case. But take heart if you're a new manager (or even a not-so-new one) because people-management skills can be learned. There are training courses. Mentors are always a possibility. There are books and articles on the subject. Take advantage of what is available to learn both the technical and people side of project management. Then put theory into practice.

In "Ten Rules for Success as a Manager," *Defense AT&L*, July-August 2004, I presented rules that define a basic people-management competency that is needed in the

21st century. No rules—those or any others—are absolute. There will always be exceptions. Managers are chosen for their judgment and will have to decide when to deviate from the rules. Good judgment is, therefore, another competency.

It may be poor form to talk about managing your boss, but it's something that has to be done. You need to set realistic expectations with your boss and other stakeholders, (what they expect of you and the project). That includes expectations on schedule, costs, and the final product. The accent is on "realistic." Don't set expectations too high or you will ruin your credibility when they're not met, but don't intentionally set them low because that won't help you either. Most of boss management is just good communication. Keep him or her in the loop. Sometimes you may need to use selective communication, but you do need to communicate. To build your credibility, highlight your successes as they come along. If a test goes well, let people know. But don't try to hide bad news. It *will* come out—and better from you than others.

It is also important to manage the other stakeholders, of which there are many: upper management, the end users, vendors, other offices/organizations—in fact, anyone who has a stake in your project. Keep them informed. It doesn't have to be a constant flow of information, but updates are important. Briefing and writing skills are a subset of this. A PM is called on for both on a frequent basis.

It comes down to this: Good communications skill is a critical competency for good people management.

Managing the Budget and Schedule

The project budget and the project schedule can be the most difficult parts of a manager's duties. Meeting the schedule and staying within budget are critical to the real and perceived success of any project. Overrunning either is a sure means of being seen as a failure. The real competencies needed here are good planning skills and attention to detail. This is an area where tools can really help. Earned value management is one of the best. Many organizations offer courses in EVM to help the PM.

Common Sense Competencies

There are a slew of other competencies needed by PMs but rarely specified by organizations. Most of these are just common sense, but sometimes common sense is an uncommon attribute.

- Patience. A PM must have the patience of Job. There are going to be product problems, data calls, and documentation requirements, not to mention personnel problems; and they all require patience beyond the ordinary. Impatient PMs may take chances or shortcuts

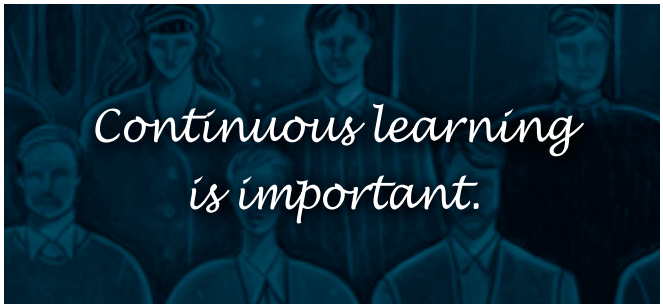
that will cost them later. They also may not listen when they should.

- Wisdom. Not just expertise, but wisdom, too, is needed for decision making and problem resolution. Expertise is knowing what to do; wisdom is knowing when and how to apply the expertise.
- Sense of humor. Too many times, if we can't laugh at what is happening, we'd have to cry. A sense of humor helps make everything more tolerable. In the words of Don Seibert, former CEO and chairman of the board of the JC Penney Company, "Humor is a common thread I've seen in thousands of meetings in different companies on the most serious of subjects. Humor helps you to keep your head clear when you're dealing in highly technical information or difficult decisions where choices aren't that clear."
- Flexibility. While the joke says that "indecision is the key to flexibility," that is not what is meant here. PMs have to be flexible because change is constant in requirements, funding, personnel, documentation, and anything else related to the project. A PM has to be able to weather those changes without losing his patience, sense of humor, or capability to get the job done.
- Creativity. Sometimes creativity is a requirement for justifying funding, but it is always needed to keep to the schedule and get the project completed. Creativity in problem resolution can be critical to a PM's success.
- Knowledge of the law of unintended consequences. That law says that every action that you take or decision you make will have consequences that you didn't plan. (See "Project Management and the Law of Unintended Consequences," *Defense AT&L*, March-April, 2006).
- Subject Matter Expertise. While PMs don't have to be experts in every technical area of their project, it really helps to have some technical knowledge going into the job. The PM has to know the questions to ask and be able to brief others on the project. PMs must also be able to tell when they're not getting the full story. A blend of technical expertise and project management expertise is what is really needed. And as the 21st century progresses, more technical expertise will become critical.

Corporate Culture, Common Sense, and Continuous Learning

The corporate culture of your organization can certainly affect what works in your environment. Tailor what actions you take so they fit into that culture. You are probably not going to be able to change the culture, so learn to function in it. (In other words, be flexible—see above.) If you want to fight any aspect of the culture, pick your battles carefully, and make sure that you have allies, especially allies with power (see "Wisdom" above).

It is also common sense to know that theory and courses are all well and good, but that you have to have practical



experience to go with theoretical knowledge. If you don't have personal experience, a good source of information is the experience of other PMs. They've been through it, seen the problems, and suffered what you're suffering. Learn from them what works and what doesn't. Mix that well with courses and professional reading and you have a recipe for PM expertise—one that even highly experienced PMs should embrace. Continuous learning is important.

With more requirements for certifications on the horizon and more competencies needed in all areas of project management, PMs need to take all the training that they can. That can be difficult, both from a time and a money point of view. If you can't take the training, at least do professional reading. DAU, the Air Force Institute of Technology, the Naval Postgraduate School, and PMI are good sources of information. There are also college courses, companies, and a number of good (free) Web sites with information that can help the neophyte and the experienced PM.

Apply common sense and basic management skills. Those skills are the basis of most of the competencies that you really need for any project. Get and use the tools that can help you and your project. EVM, mentioned earlier, is one. A good risk management program is another. Add a good requirements management system to your list of tools so that you can track, monitor, and test all requirements. There are others, but many will be specific to the project.

While it wasn't aimed at project management, Sir Winston Churchill (1874-1965), British statesman and PM (in this case it is prime minister, rather than project manager), summed it up perfectly when he said "However beautiful the strategy, you should occasionally look at the results."

That's the bottom line—results. They are what PMs are paid for and what all of the competencies lead to. And welcome to the 21st century.

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Learning Program Management on the Battlefield at Gettysburg

Owen Gadeken

What's the best way to learn key program management concepts and skills? The Defense Acquisition University, like many institutions, employs both online and classroom instruction. There is also something to be said for experience as the best teacher, but that experience does not have to come from traditional acquisition programs.

In a recent Program Management Office Course (PMT-352B), the learning-from-experience concept was applied in a class field trip to the Gettysburg Civil War Battlefield. Using the Project Management Institute (PMI) definition of a project as "a temporary undertaking which produces a unique product or service," the Battle of Gettysburg can be considered a project—or to be more precise, two projects: the Union (Army of the Potomac) project and the Confederate (Army of Northern Virginia) project.

The purpose of the class field trip was to conduct an on-site examination of these two "projects" using the wealth of historical data readily available. This battlefield tour was led by John Baniszewski, who is both a licensed Gettysburg tour guide and has a "real" job as a project manager at NASA's Goddard Space Flight Center in Greenbelt, Md.

Preparing for Battle

Class members were given a set of tailored readings prior to the trip, along with a score sheet created by Baniszewski and based on the PMI Project Management Body of Knowledge criteria. They were then required to score the two projects based on evidence accumulated from both the readings and their tour of the battlefield. At each tour stop, Baniszewski used a hands-on approach, designating a portion of the class as "Company A" and having them briefly walk through the troop movements on that portion of the battlefield. He also drew analogies from events on the battlefield to current acquisition projects in both NASA and DoD.

As the battlefield tour progressed, students found the information necessary to fill in their score sheets. They learned that the Confederate project had a very clearly defined scope for invading the North but was unable to execute it. Gen. Robert E. Lee, normally an excellent communicator and integrator, seemed disorganized and out of touch with his key subordinates during most of the battle. The Union, on the other hand, was clearly disorganized as the project began, but with the leadership change to Gen. George Meade just days before the battle, that was rapidly turned around. Although not recognized as

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either a charismatic leader or brilliant tactician, Meade used his resources wisely and proved to be a uniting force for the Union Army. In short, he was the better project manager in this situation.

So what are the project management lessons we can learn from the Battle of Gettysburg? I'm sure there are probably many more than we can cover here, so I will concentrate on four key themes that I think were very relevant to the outcome of the battle and are just as relevant to project managers in today's defense acquisition environment.

Lesson 1: Communication

Communication among senior leaders and between the leaders and their troops was vitally important to the outcome of every Civil War battle. During the Civil War, cavalry detachments were a primary communications tool for the army. They not only screened their own army's movements from the enemy, but also continually gathered information on enemy movements and troop strength.

Gettysburg tour guide and real-life NASA project manager John Baniszewski (left) explains tactics with the help of author Gadeken holding battle plans.
Photograph by John Bowden.

There was no better cavalry commander in the Civil War than Confederate Gen. J. E. B. Stuart. However, Stuart also craved the fame and fortune that went along with the job and was not above grandstanding when the opportunity presented itself. Such an opportunity arose as Lee took the Army of Northern Virginia on their second invasion of the North in June of 1863. Stuart pushed Lee to allow him to go on a daring raid around the Union Army, which he had done successfully in the past. Lee agreed as long as Stuart was able to still perform his primary function of scouting enemy troop movements. Unfortunately, Stuart's raid not only took far longer than anticipated, but it also took him out of contact with Lee's army during the days leading up to the battle. As a result, Lee was almost totally in the dark as to his enemy's whereabouts and blundered into the Union Army at Gettysburg on June 30th, 1863. Lack of communication plagued the Confederate Army throughout the battle.

On the other hand, for Army of the Potomac, communication improved dramatically once Meade took over. Information about the Confederate Army was obtained from multiple sources (Union cavalry, civilians, Confederate deserters, captured prisoners, escaped slaves, and telegrams from Washington) and fed to the army's Bureau of Military Intelligence. Meade made excellent use of this unit to provide almost real-time intelligence. As a result, Meade was much better informed for decisions he made during the battle.

Just as communication played a vital role in the outcome at Gettysburg, it is also vital to success in project management. My study (reported in "The Ideal Program Manager," *Defense AT&L*, May-June 2005) found communication to be the top skill required of successful defense program managers.

Lesson 2: Project Integration

Integration among the different units that make up an army is critical to their success on the battlefield. Lack of coordination at Gettysburg cost many troops their lives and many commanders their jobs.

At Gettysburg, Lee seemed reluctant to assemble his key subordinates to jointly discuss strategy. He tended to interact with commanders individually, giving them their orders and not expecting any debate. He may have been fatigued from the northward march, but most probably he was a victim of his recent and dramatic successes against the Army of the Potomac and thus had little respect for his adversary. His plan was simply to lure the Union army out into the open and destroy it. He gave no thought to a backup plan or the possibility of defeat. Not surprisingly, Confederate troop movements were not particularly well coordinated on any of the three days of the battle.

There is something to be said for experience as the best teacher, but that experience does not have to come from traditional acquisition programs.

Meade took just the opposite tack in dealing with his key subordinates, having been one of their peers until just three days before the battle. As a competent field commander, Meade skillfully coordinated the movement of his strung-out units toward the impending battle at Gettysburg. Arriving at midnight after the first day of the battle, Meade immediately assembled all of his field commanders and assessed the information they provided. He then had a map of the battlefield drawn up with copies provided to his commanders, indicating their positions and assignments for the next day. Meade repeated this process at the end of each day of the battle, asking each subordinate to report in turn and asking their opinions of the strategy laid out for the coming day. He used this participative management approach to both obtain information and get buy-in from his key subordinates.

The need to coordinate different units in an army corresponds to the need to coordinate the different parts of a project (both subsystems and subteams, such as integrated product teams). Recognition of this need prompted the PMI to alter its established body of knowledge by adding an additional ninth element: *project integration*. In fact, one might argue that the essence of competent project management, and what makes it truly unique, is successful systems integration.

Lesson 3: Flexibility

Even the best-laid plans of the commanding generals quickly became outdated as the battle progressed. So both Lee and Meade were constantly faced with balancing clear and specific direction to their subordinate commanders with the need to allow them the flexibility to adapt to the changing battlefield environment. Their success in achieving this balance was the single most critical factor in the outcome of the battle. To understand why this was the case, we need to go back to the organizational changes made in both armies leading up to the battle.

When he assumed command of the Army of Northern Virginia in 1862, Lee put together a team of very capable field generals with different talents. Lee was a master at using these talents so they complemented each other on the battlefield. But the talent mix was disrupted when Lee's leading field commander, Thomas "Stonewall" Jackson, was accidentally killed by his own troops after his brilliant rout of the Union army at Chancellorsville in May of 1863. This led to a reorganization of Lee's army that elevated James Longstreet to the position of Lee's most able lieutenant. Unlike Jackson, who was a daring, attack-oriented leader, Longstreet was a much more methodical and defensive-minded commander. Lee's reorganization also brought increased responsibility for two other generals, Richard Ewell and A.P. Hill.

Lee had evolved a style where he allowed his field commanders discretion in carrying out their assigned orders, but this proved to be seriously flawed with his new leadership team. Although Lee had given orders to avoid a battle until the whole army was assembled, the often-impetuous A.P. Hill and his lead element under Gen. Harry Heth decided to attack when they encountered an enemy force at the outskirts of Gettysburg. With no clear plan, Confederate units attacked piecemeal as they arrived on the battlefield. Still, Lee's army began to rout their opponent. In pursuing the retreating Federals, Lee gave Gen. Ewell discretionary orders to take the Federal position on Cemetery Hill "if practicable." But Ewell was reluctant to push his advantage on the eve of the first day, and by the next morning, Union troops were dug in and reinforced, making their position virtually impregnable. This effectively negated Ewell's contribution for the rest of the battle.

Longstreet, on the other hand, proved fully capable of executing discretionary orders on the battle's second day. Based on faulty intelligence, Lee directed Longstreet to make a flank attack on the Union left. When Longstreet discovered the extended Union line, he adapted quickly and executed a new plan that featured a carefully staged series of attacks designed to exploit the weaknesses in the Union position. Although outnumbered, his men drove the Union army back a mile and inflicted severe casualties on them.

The crux of the battle came on the third day, when Lee directed Longstreet to make a frontal assault against the middle of the Union line. Longstreet protested violently that the Union position was too strong and could not be taken. Lee ignored the advice of his experienced field commander and directed the attack be made. The rest, as they say, is history. Longstreet's lead division under Gen. George Pickett was brutally repulsed and "Pickett's Charge" became known as the high-water mark of the Confederacy. The haunting question that remains is why Lee didn't listen more carefully to his trusted subordinate.

Apparently he felt so sure of his plan that he was unable to adjust to the realities of the situation as it actually existed on the battlefield.

At Gettysburg, Lee seemed at cross purposes with his subordinates. Ewell and Hill, who needed close supervision and specific direction, floundered when allowed to use their discretion. And Lee's best field officer, Longstreet, was hamstrung with specific direction from Lee based on faulty intelligence.

The Union army was reorganized when Meade took command. Meade was able to appoint several competent field commanders—such as Reynolds, Hancock, and Buford—who played key roles in the outcome of the battle. However, Meade did not give his generals the same broad discretion as did Lee, since they were all operating in a hastily reorganized force that, one could argue, needed more centralized control. Still, Meade frequently consulted with his subordinates as part of his strategy of consensus decision making. Meade also had his share of problem generals—Howard and Sickles, for example—but their faulty decision making proved less costly to the Union because Meade compensated with his better information, planning, and control on the battlefield.

The flexibility dimension proved to be the key discriminator between the two opposing armies at Gettysburg. This is equally true in today's defense acquisition environment. Based on 360-degree feedback data accumulated over a 10-year period, defense program managers still lack the ability to properly delegate and empower their subordinates. In our database of almost 8,000 defense program managers, delegation and empowerment rank dead last of all the 24 skill areas. The results of faulty empowerment can be just as damaging to the success of our acquisition programs as they were on the battlefield at Gettysburg.

Lesson 4: Courage

With the increased range and lethality of their weapons, massed troops proved especially vulnerable in combat, and field commanders were slow to change their tactics to better protect their troops. Courage is what it took for Civil War troops to execute the orders of their superiors, and there was no lack of it on both sides during the battle of Gettysburg.

Examples of courage on the Union side include Gen. John Buford's decision to use his cavalry to hold out against the massing Confederate infantry on the outskirts of Gettysburg, thereby buying time and securing strategic ground vital to the Union during the remainder of the battle. The most-often-cited example of courage was Col. Joshua Chamberlain's desperate defense of the Union left on Little Round Top. Out of ammunition and in danger of being overrun by a superior enemy force, he ordered his men to fix bayonets and charge down the hill. This move both completely surprised and then defeated their foe. Finally, there was Gen. Hancock, who anchored the Union center during Pickett's charge. Believing he should be constantly visible to his men, he bravely rode up and down the line in full view of the attacking columns. It earned him wounds, but it also earned him the admiration and respect of his men.

Examples of courage were equally evident on the Confederate side. Even though deep in enemy territory, Southern units were ripe for a fight and often had to be restrained by their commanders. The ultimate example of courage was the final Confederate charge on the third day of the battle involving over 13,000 troops moving across a mile of open terrain, where they were exposed to overwhelming artillery and musket fire. The sad commentary here was that such brave men suffered defeat through no fault of their own, but from poor planning, poor coordination, and lack of leadership.

There is a direct analogy between courage on the battlefield and courage in program management. Program managers must have the courage of their convictions and be willing to take prudent risks and be accountable for their actions. Over the last few years, much of the detailed direction has been removed from our acquisition policies in order to encourage our managers to adopt more flexible and innovative acquisition approaches. Yet this flexibility has been far from evident, which would suggest that program managers are still reluctant and perhaps lack the courage to take risks in our system. Although the policies have changed, the acquisition culture is still risk-averse. Courage is still needed to overcome this obstacle.

In Any Environment, Challenges

What I hoped to accomplish with the student field trip to Gettysburg and with this article was to show how closely the challenges faced during the Battle of Gettysburg match the challenges faced by acquisition program managers today. The biggest single variable affecting the outcome of the battle was people and their actions or inactions. This is equally true in our acquisition environment today. Program management is really people management. The actions or inactions of the program manager and his or her leadership team in using communication, integration, flexibility, and courage will set the stage for success or failure of the program, just as they did on the battlefield at Gettysburg.

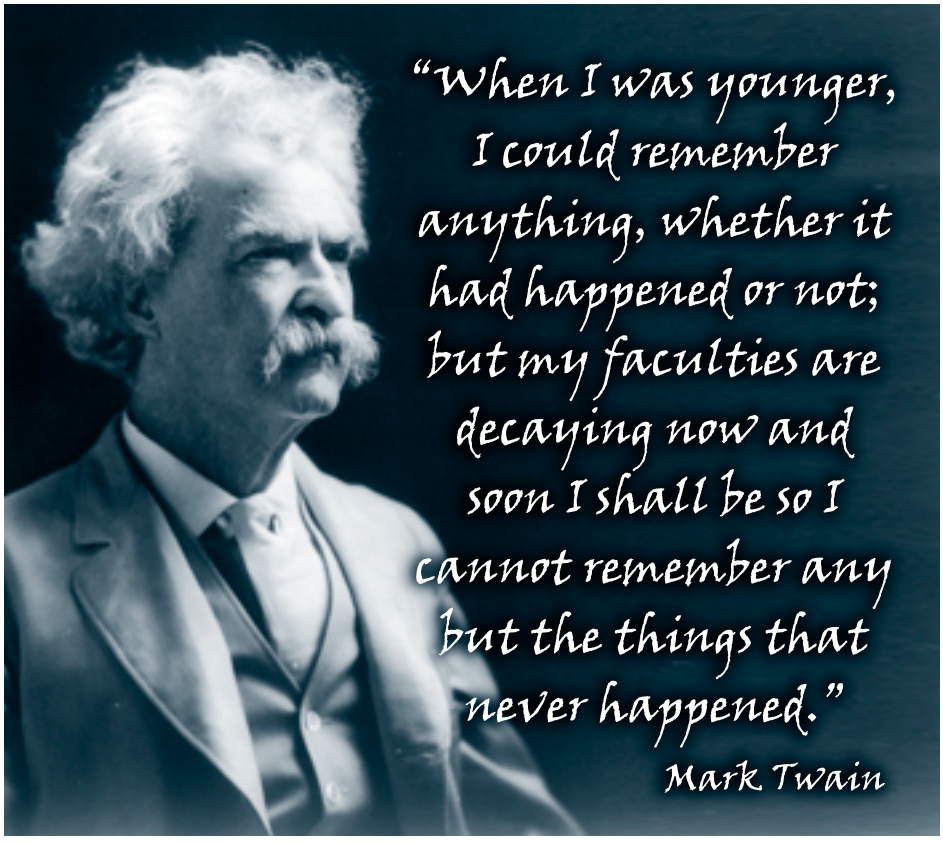
The author welcomes comments and questions. Contact him at owen.gadeken@dau.mil.

The "Seven Sins of Memory"

How They Affect Your Program

Col. Scott S. Haraburda, USA

People's memories are flawed. During the 24th Army Science Conference in Orlando, Fla., in December 2004, Harvard University psychology professor Daniel Schacter presented his theories of the "seven sins of memory" to the Army's scientific community. In addition to providing a brief description of these memory problems, he effectively demonstrated that I, along with the rest of his audience, exhibited the problems. If a person's memory is not accurate, decisions based upon these faulty memories can cause significant problems. Thus, program managers, including civilian leaders, military officers and Lean Six Sigma (LSS) practitioners, should be cognizant of these issues and mitigate them to improve their leadership abilities, primarily decision making.



Transience: a decreasing memory over time

In 1885, German psychologist Hermann Ebbinghaus published his groundbreaking article "Über das Gedchtnis" ("On Memory") in which he described experiments he conducted on himself to describe the process of forgetting. A popular schematic of this problem is the forgetting curve, which illustrates the decline of memory retention over time. The stronger the memory, the longer one retains it. A typical graph of the forgetting curve shows that humans tend to halve their memory of newly learned knowledge in a matter of days or weeks unless they consciously review the learned material.

- Program managers should be aware that memory fades with time, and that the best way to obtain information from a person is to obtain it quickly after the event. Conduct an after-action review immediately after an activity.

Absent-mindedness: forgetting to do things

This is memory loss resulting from failure to pay attention when carrying out an act—putting your keys or glasses down without registering where you're putting them. Schacter's example involves cellist Yo Yo Ma. In October 1999, Ma left his $2.5 million cello, made in 1733 by Antonio Stradivari, in a New York cab. Apparently, he was preoccupied with other things and forgot to remind himself to ask the cab driver to retrieve his cello from the trunk.

- People are prone to forget important tasks. A good technique to diminish this problem is to apply a couple of

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Stephen Covey's techniques from *Seven Habits of Highly Effective People*— specifically to be proactive and to put important things first. Develop a prioritized task list and use it throughout the day.

Blocking: the tip-of-the-tongue experience

This is characterized by being able to retrieve quite a lot of information about the target word without being able to retrieve the word itself. You may know the meaning of the word, how many syllables the word has, or its initial sound or letter, but you can't retrieve it. The experience is coupled with a strong feeling that you know the word and that it is hovering on the edges of your thought.

- Be aware that people on your team may not remember the exact information that is required when needed.

Misattribution: attributing a memory to an incorrect source

An example of this is hearing something from a friend and thinking that it was heard on the radio. An example of this involves Donald Thomson, a memory researcher, who in the 1970s appeared in a television show on the unreliability of eyewitness testimony. Not long after the show aired, he was picked up by the police because a rape victim had identified him as the rapist. He had an unshakable alibi: The assault had occurred when he was on TV describing how people could improve their ability to remember faces. The victim had been watching Thomson on TV before the attack and had confused her memory of him with her memory of the rapist.

I recently conducted a couple of experiments with several senior military leaders and LSS candidates. In the first experiment, I asked participants to read a four-line passage orally and count the number of times that a specific letter of the alphabet occurred. No matter how hard they tried, and retried, about half of them were unable to come up with the correct number. This was significant, since several of them were field-grade military officers who possessed graduate degrees and should have been fully capable of identifying their alphabet letters. In the second experiment, I read a list of 15 words orally to these same leaders to determine their short-term memory retention. Over 90 percent of them remembered a word that was not given to them, thus creating a false memory.

- People have a tendency to remember things that didn't happen. The best way to counteract the effects of this kind of memory issue is to be diligent in taking notes of important events. Take minutes from all meetings, regardless of whether someone else is taking notes. Record important events on a daily basis in a daily planner. This has the added benefit of helping you to identify accomplishments for periodic performance evaluations.

Suggestibility: implanted memory from others

PMs need to be careful about the way in which they solicit information from others since the way a questions is asked may generate false information. The following are six different types of questions that can illicit a false answer or inaccurate memory:

1. Assumptive Question. This bases the question on an assumption. "How much will the price of gas go down next month?" assumes that the price will go down.
2. Linked Statement. This links two different items together and does not provide the same information for both items. Asking "Would you prefer to live in Clinton or Terre Haute where the crime rate is high?" doesn't mention anything about the crime rate in Clinton.
3. Implication Question. This provides a cause and effect result to the answer of the question. "If you stay out late tonight, how will you remain awake at work tomorrow morning?"
4. Asking for Agreement. This is typically the closed question that requires either a "yes" or "no" answer. "Do you agree that we need to save the whales?"
5. Tag Question. These usually involve short phrases that end in a negative question. "You are coming to the very important LSS meeting, aren't you?"
6. Coercive Question. The context or tone of the question results in either an implicit or explicit coercion. In the following example, "How can you say that you will not be there?" the questioner conveys negative consequences for not attending.

- You are most likely to get accurate answers if you word questions in a neutral way.

Bias: distortion based upon knowledge, beliefs, and perspective

You need to understand the basis of the information that people provide. If four people observe the same object or event, they will describe it from four different perspectives. Here's how four people might describe the movie *The Wizard of Oz*:

1. The young child will tell the story, listing the sequence of events (not necessarily in the right order).
2. The emotional child will explain that the movie was very scary with witches and wizards and flying monkeys.
3. The adolescent will explain the special effects in the movie.
4. The intellectual will identify the themes of the movie.

- Different people on your team will remember the same thing in different ways, so you need to assess these differences in your decisions. For example, the PM may need to assess conflicting information by considering both the engineer's desire to quickly solve problems using existing knowledge and the scientist's desire to delay problem solving in order to discover new knowledge.

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E-mail letters to the managing editor: defenseat&l@dau.mil.

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Persistence: unwanted memory

Within the military, the most prevalent example of this is Post-traumatic Stress (PTS) Disorder. Audie Murphy, the most decorated American soldier in history at the time of World War II, suffered from PTS as a result of his experiences. According to his first wife, he suffered terrible nightmares and always slept with a gun under his pillow. There are three symptoms that program managers must understand:

1. Intrusion. Since the sufferer cannot process difficult emotions in a normal way, he or she re-experiences the trauma in recurrent nightmares or daytime flashbacks, leading to high anxiety levels.
2. Hyperarousal. Characterized by a state of nervousness, the person is in fight-or-flight mode, exhibiting jumpiness in connection with sudden sounds or movements.
3. Avoidance. The event is so distressing that the person strives to avoid contact with everything and everyone—even his own thoughts—that can arouse memories of the trauma. This leads to isolation.

- By understanding and recognizing the symptoms of PTS, you'll be in a better position to help make a nonproductive team member suffering from unwanted memories into a productive one. If possible, work with the team member to determine why he or she is unable to contribute to the team, and then try to establish an environment that mitigates the unwanted memory. In extreme cases, the individual may need to seek professional help, and you should be willing to support this help as needed.

What You Can Do

The following is a consolidated list of seven actions—"penance" for the seven memory sins. Performing them will improve the accuracy of the information obtained from others. Failure to do so will result in your making poor decisions based on faulty information—and that can seriously impact the outcome of your project.

1. Obtain information quickly after an event, when it's fresh in people's minds.
2. Use a prioritized task list.
3. Take notes from important events, including meeting minutes.
4. Record important events and milestones daily.
5. Use neutrally worded questions when soliciting information.
6. Understand the basis or perspective of the person providing the information.
7. Understand and recognize the symptoms of PTS.

The author welcomes comments and questions. Contact him at scott.haraburda@us.army.mil.

2006 DAVID PACKARD EXCELLENCE IN ACQUISITION AWARD WINNERS

Krieg Honors Five Teams at PEO/SYSCOM Commanders' Conference Luncheon on Nov. 8, 2006

On Nov. 8, 2006, Under Secretary of Defense (Acquisition, Technology and Logistics) Ken Krieg presented the David Packard Award for Acquisition Excellence to five program teams at the fall Program Executive Officer/Systems Command Commanders' Conference luncheon held at Fort Belvoir, Va. The Packard is given to Department of Defense civilian and/or military organizations, groups, and teams who have demonstrated exemplary innovations and best practices in the defense acquisition process.

"Our acquisition workforce is composed of thousands of ethical, conscientious professionals who have dedicated their lives to make acquisition a strong organization capable of sustaining our national security. I'm particularly proud of the efforts of these winning teams," Krieg said.

Defense Energy Support Center Hydrazine Acquisition Team

For using a comprehensive creative acquisition strategy that resulted in competition for the first time in over 25 years in the award of the government's hydrazine requirements. Inventive contracting tools included obtaining 20-year contracting authority to encourage small business participation, application of multiple indices for Economic Price Adjustment provisions for both product and labor contract line items, and the use of a commercial sales clause that allows the contractor to use its facility for commercial business with an equitable credit to the government. Continuous process improvements included issuance of a draft solicitation to industry for comment. The solicitation also examined multiple business process scenarios in order to develop the business case to determine which business process was in the government's best interest. The team's acquisition strategy produced over $220 million in savings in present value dollars at the time of contract award.

Photographs by SGT Tanekwa Bournes, USA

2006 DAVID PACKARD EXCELLENCE

Krieg Honors Five Teams at PEO/SYSCOM Com

The Offices of Project Manager, Close Combat Systems (PM CCS) and Project Manager, Infrared Countermeasures (PM IRCM)

For their outstanding achievements, working in concert with each other while rapidly equipping U.S. Army fixed wing and rotary wing aircraft with the Common Missile Warning System (CMWS), a critical lifesaving suite of force protection capabilities that directly supports Operation Enduring Freedom and Operation Iraqi Freedom. The teams' rapid development, production, and successful fielding of unique individual platform/model installation A-Kits, universal CMWS B-Kits, and expendable flare countermeasures achieved an exemplary outcome—the resounding success of the Common Missile Warning System in preserving Soldier's lives in battle. Largely due to their efforts, not a single CMWS-equipped aircraft has been lost to a Man Portable Air Defense System in the global war on terrorism.

Office of Project Manager, Close Combat Systems (PM CCS)

Office of Project Manager, Infrared Countermeasures (PM IRCM)

IN ACQUISITION AWARD WINNERS

manders' Conference Luncheon on Nov. 8, 2006

EA-6B Improved Capability (ICAP) III Program Team

EA-18G Program Team

EA-6B Improved Capability (ICAP) III and EA-18G Program Teams

For superb accomplishment through collaboration on producing the next Airborne Electronic Attack (AEA) system. Both teams shared AEA subject matter expertise across their respective programs to ensure the ALQ-218 airborne electronic attack (AEA) system operates in each airframe. This synergy was a catalyst for innovative acquisition development and reuse of the ALQ-218 system, including its highly sophisticated software code that reduced cycle times and avoided significant cost. Strong collaboration reduced schedule risk while introducing new and highly complex avionics, leveraging the EA-6B ICAP-III development of the ALQ-218 system for the EA-18G program. The EA-6B program developed and operationally tested the ALQ-218 AEA system not only for current capability enhancement, but also for future functionality in the follow-on airframe, the "EA-18G." Through tireless commitment to excellence and sharing of engineering and analytical skills, the EA-18G remains ahead of an aggressive schedule for producing the next generation AEA capability.

3RD ANNUAL USD(AT&L) WORK

Finley Honors Five Teams at PEO/SYSCOM Com

On Nov. 7, 2006, Deputy Under Secretary of Defense (Acquisition and Technology) James I. Finley (below, second from left) presented the DoD AT&L Workforce Development Awards to five outstanding organizations during the fall 2006 Program Executive Officer/Systems Command Commanders' Conference luncheon held at Fort Belvoir, Va. Acting Under Secretary of Defense (Acquisition, Technology and Logistics) Michael Wynne authorized the AT&L Workforce Development Awards in May 2004 as an annual event designed to recognize field organizations that have made a profound and lasting contribution to career-long learning and development of their employees. The award program also serves to capture best practices for other organizations to adopt.

Finley said that the workforce awards, now in their third year, are in direct support of the USD(AT&L)'s No. 1 goal: a *High Performing, Agile, and Ethical Workforce*. Fifteen field organizations, he noted, submitted applications and were carefully considered for this year's awards.

"I'd like to commend all 15 of the organizations that submitted applications," Finley said. "The sharing of your best practices will help us as we work forward toward our goal of a high performing, agile, and ethical workforce."

Finley stated that the five winning AT&L organizations serve as outstanding examples of "the very best in workforce development and practices."
Their efforts," he concluded, "reflect the highest levels in human capital innovation that we should all strive to emulate."

GOLD WINNER–LARGE ORGANIZATION
Naval Surface Warfare Center, Dahlgren Division
Dahlgren, Virginia

Award-Winning Best Practices

- Supervisory Skills Development Program
- Academic Development and Professional Certification Policy
- Explorations in Leadership Program

FORCE DEVELOPMENT AWARDS

manders' Conference Luncheon on Nov. 7, 2006

GOLD WINNER–SMALL ORGANIZATION
U.S. Army Natick Soldier Center
Natick, Massachusetts

Award-Winning Best Practices

- Strategic Planning
- NSC Scientist and Engineers Career Development Guide
- Supervisor's Role as a Coach and Mentor

SILVER WINNER–LARGE ORGANIZATION
U.S. Army Aviation and Missile Life Cycle Management Command (AMCOM) ▪ Redstone Arsenal, Alabama

Award-Winning Best Practices

- AMCOM Leader Development Life Cycle
- New Employee Orientation Course
- People Empowering People Mentoring Program
- AMCOM Acquisition Center University

SILVER WINNER–SMALL ORGANIZATION
Communications-Electronics Life Cycle Management Command Acquisition Center
Fort Monmouth, New Jersey

Award-Winning Best Practices

- The Intern Institute
- Professional Development Staff
- Attendance at the Army Management Staff College Sustaining Base Leadership and Management Program

BRONZE WINNER
Naval Surface Warfare Center
Port Hueneme Division ▪ Port Hueneme, California

Award-Winning Best Practices

- Management Succession Program
- Pre-Supervisor Development Program
- Competency Management System
- Master of Science in Systems Engineering (in Partnership with Naval Postgraduate School)

Securing Strategic Benefits ... continued from page 21

tomers can gain hands-on access to architecture products as they become available.

The Web also serves as a means by which the architecture team can discuss issues and share accomplishments with other teams, and it facilitates outreach to partners in related communities of interest, whose involvement is essential to achieving goals such as (real-time) collaborative engagement, knowledge management, and interoperability.

Hands-on customer experience with architecture products provides valuable insight to both the customer and the architecture team, especially where the enterprise architecture tools (such as Metis) provide what-if scenario-generation capability.

For example, architecture products enable both customers and developers to understand which systems support which applications, whether that support is redundant or insufficient, and the stakeholders involved. This information can be combined with monthly maintenance and transaction cost data to identify the most expensive/inefficient of the systems, which would be high-priority candidates for retirement. It also can be used to identify critical dependencies (for example, among components that would have gone unrecognized but for visualization of linkages of agency infrastructure components provided by the architecture). Left unrecognized, these dependencies will result in unplanned and adverse ripple effects to project cost and schedule.

Implement architecture configuration management—a recommendation that most architecture tools support.

Record architecture project information along with related comments, suggestions, and concerns into a project-reporting tool. This will enable traceability between actions and outcomes and thus minimize potential confusion concerning commitments and responsibilities among stakeholders, customers, and the development team.

Identify and prioritize risk with respect to the potential impact to project scope, schedule, quality, budget, and performance; and mitigate that risk according to a defined, communicated plan and appropriate governance structure.

Ensure that change requests have business value (i.e., measurably enable the customer to improve efficiency operations, lower costs, etc.). This means that the requests must have business sponsors.

Reduce team learning-curve time and improve collaboration and feedback through the use of integrated product teams. The teams also will ensure a measure of shared technical experience, a common understanding of the strengths and weakness of enterprise architecture, team cohesion, and a shared vocabulary. The net effect will be an accelerated breakdown of traditional disciplinary, cultural, and organizational stovepipes.

Strengthen systems engineering project management practices that are essential to implementing and employing basic project status indicators and controls. Where these practices are not in place, there will be considerable difficulty in developing a realistic work breakdown structure, project plans, and schedules, thus putting the entire modernization effort at risk.

Limit the rate at which depth and detail are added to the architecture products to the rate at which uncertainties concerning factors (such as the stability of customer objectives) are resolved. This will have beneficial side effects such as minimizing the time and scarce resources spent on products of minimal business value.

The Case for Enterprise Architecture

Enterprise architecture enables the transformation of organizations into efficient users of capital, be it human/intellectual, organizational, or technical. It does so by identifying capability and resource requirements of the agency mission before resources are committed to development, thereby minimizing the risk of costly rework and schedule overruns; identifying reuse; and streamlining opportunities for technologies, processes, procedures, and information assets. During subsequent development, architecture also enables the management of out-of-scope changes which, however meritorious, would derail subsequent modernization efforts.

By encouraging collaborative engagement among customers, developers, and stakeholders, architecture enables a "virtuous" feedback loop that improves the management of intangible factors by surfacing differences in disciplinary organizational experience and culture that otherwise would impede effective communications in subtle—but significant—ways. One important benefit is to shorten the decision cycle, thereby enabling management to be proactive rather than reactive, a critical asset in rapidly evolving environments.

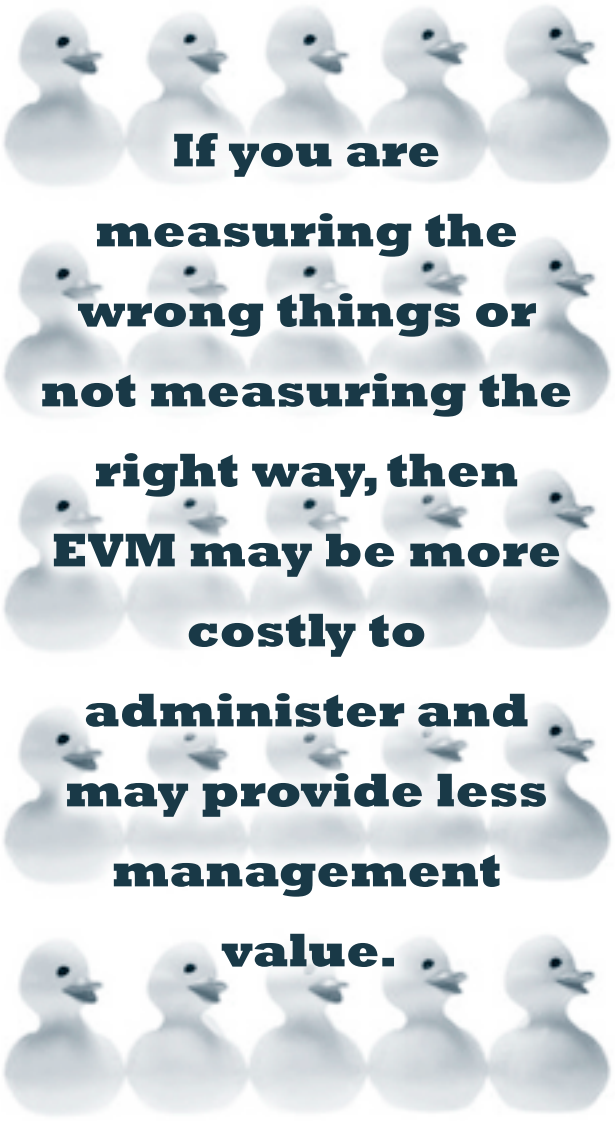
Finally, by enabling a pay-as-you-go approach to modernization, architecture affords an agency the opportunity to eliminate the funding of duplicate and inefficient systems and equipment purchases, etc., thereby freeing funds for other tasks, lowering overall transformation costs, and accelerating the transformation process.

The author welcomes comments and questions. Contact him at rsx@ieee.org.

SE and EVM Support for Performance-Based Awards

Paul J. Solomon

On March 29, 2006, DoD issued a memorandum directing that award fee contracts be structured to focus government and contractor efforts on meeting or exceeding cost, schedule, and performance requirements; and that award fees be linked to achieving desired program outcomes. This was buttressed by the DoD Appropriations Act of 2007, which prevents payment of award fees for performance that does not meet the requirements of the contract (Sec. 9016). Systems Engineering (SE) standards and Earned Value Management (EVM) provide a framework for linking award fees to desired program outcomes. This article provides practical advice for defining the technical performance requirements and desired program outcomes in SE terms. It updates information that was published in "Integrating SE with EVM," *Defense AT&L*, May-June 2004.



GAO Findings and Resultant DoD Policy

The DoD policy and guidance follows Government Accountability Office recommendations. GAO studied failures in procurement of weapons systems and Information Technology systems. Recent reports (GAO Reports 06-66, 06-391, 06-110) disclose recurring weaknesses in procurement management and provide recommendations for achieving desired outcomes. Some GAO findings and recommendations are summarized below.

- *Finding*: Contractors are not held accountable for achieving desired outcomes, including cost goals, schedule goals, and desired capabilities.
- *Finding*: Programs do not capture, early on, the requisite knowledge needed to effectively manage program risks.
- *Finding*: DoD needs to change its requirements and budgeting processes to get desired outcomes from the acquisition process.
- *Recommendation*: Capture knowledge about completion of subsystem and system design reviews.
- *Recommendation*: Agree that drawings are complete.
- *Recommendation*: Demonstrate with prototype that design meets requirements.

The resultant DoD policy and guidance directs the following: (1) Award fees must be linked to desired interim outcomes, discrete events, and milestones. (Examples of interim milestones are timely completion of Preliminary Design Review (PDR) and Critical Design Review (CDR).) (2) Progress toward interim milestones must be assessed. (3) Award fee provisions must clearly explain how a contractor's performance will be evaluated.

Solomon *oversees EVM on Northrop Grumman Corporation programs. He is an author of the EVMS Standard and the book,* Performance-Based Earned Value®. *He is a recipient of the Department of Defense David Packard Award for Excellence in Acquisition.*

If a program manager specifies contractual requirements for the conduct of a complete, integrated SE effort, and integrates SE with EVM, award fees can be linked to interim outcomes, discrete events, and milestones. It is possible to ensure that the reported earned value truly integrates technical performance with schedule and cost performance. When SE is integrated with EVM, earned value and its derived measures—such as the cost-performance index—can provide a valid, objective basis for linking award fees to desired outcomes.

Policy or Guide	Policy	DAG	SEP	WBS	IMP/IMS
Event-driven timing of technical reviews	X	X	X	X	X
Success criteria of technical reviews	X	X	X	X	X
Assess technical maturity in technical reviews		X	X	X	
Use TPMs to compare actual vs. planned technical development and design maturity		X	X		X
Use TPMs to report degree to which system requirements are met in terms of performance, cost and schedule		X	X		
Integrate SEP with IMP, IMS, TPMs, EVM		X	X		X
Integrate WBS with requirements specification, statement of work, IMP, IMS, and EVMS.				X	X

Guidance for Integrating SE with EVM

DoD Guides

DoD guidance for integrating SE with EVM is included in the *Defense Acquisition Guidebook* (DAG); the *SE Plan Preparation Guide*; the *Work Breakdown Structure Handbook*, MIL-HDBK-881A; and the *Integrated Master Plan and Integrated Master Schedule Preparation and Use Guide*. The guides provide discretionary best business practices, as summarized in the figure on this page.

Integrated Baseline Review (IBR)

An important milestone for award fees should occur shortly after authority to proceed. Per the Federal Acquisition Regulation, the IBR is a joint assessment of the ability of the project's technical plan to achieve the objectives of the scope of work and the degree to which the management process provides effective and integrated technical/schedule/cost planning and baseline control. The IBR may also be use to verify that contractual requirements for the conduct of a complete, integrated SE effort have been incorporated into the baseline. These objectives should be criteria for award fees.

Standards and Best Practices

The following SE standards were adopted by DoD and are cited in the *DAG*: Electronic Industries Alliance Processes for Engineering a System (EIA 632) and the Institute of Electrical and Electronics Engineers Standard for Application and Management of the SE Process (IEEE 1220). They provide guidelines and best practices for using product metrics, including technical performance measures (TPMs), and for defining completion criteria for PDRs and CDRs.

TPMs and Product Metrics

The guidelines and best practices for product metrics from EIA 632 are to identify and track TPMs to determine the success of the system; project the evolution of the parameter as a function of time toward the desired value at the completion of development; and to identify product metrics and their expected values that will affect the quality of the product and provide information toward satisfying acquirer and other stakeholder requirements, as well as derived requirements.

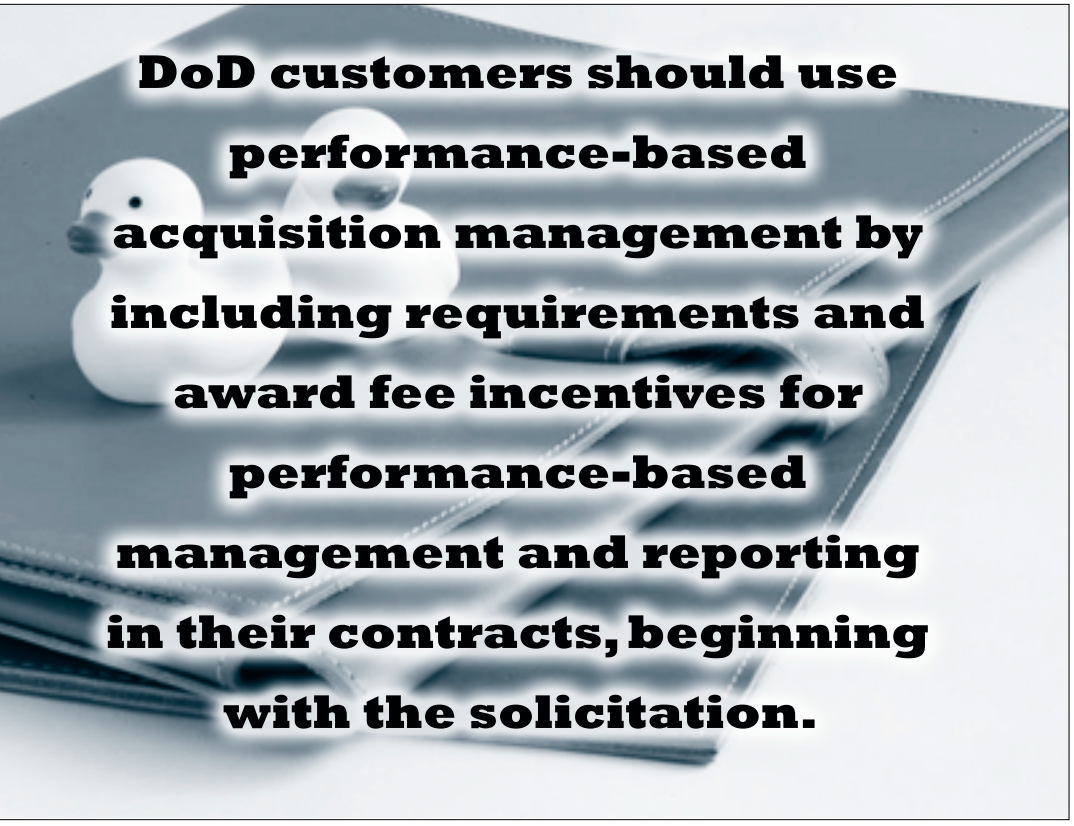
IEEE 1220 includes similar guidance on TPMs and product metrics. It also discusses the need for progress measurements of design maturity.

Completion Criteria for Technical Reviews

IEEE 1220 describes tasks that should occur during all technical reviews. The outcome of these tasks can be used to determine award fees. The tasks are to assure that all master schedule success criteria have been met; assess development maturity to date; assess the product's ability to satisfy requirements; and assure traceability of requirements and validity of decisions. IEEE 1220 provides specific guidance and exit criteria for PDRs and CDRs, as follows.

The PDR Subsystem review assures that subsystem definition is sufficiently mature to meet SE master schedule criteria; component allocations and preliminary component specifications provide a sound subsystem concept; subsystem risks have been mitigated; trade-study data substantiate that subsystem requirements are achievable; and decisions made in arriving at the subsystem configuration definition are well-supported by analysis and technical data.

The PDR System review takes place after completion of subsystem reviews. Its purpose is to determine whether



the total system approach to detailed design satisfies the system baseline; unacceptable risks are mitigated; issues for all subsystems, products, and life-cycle processes are resolved; and accomplishments and plans warrant continued development effort.

The CDR Component review ensures that each detailed component definition is sufficiently mature to meet measure-of-effectiveness/measure-of-performance criteria; component specifications provide a sound component concept; component and related life-cycle process risks have been mitigated to a level appropriate to support Fabrication, Assembly, Integration and Test (FAIT); trade-study data substantiate that detailed component requirements are achievable; and decisions made in arriving at the detailed component definition configuration are well-supported by analysis and technical data.

The CDR Subsystem review follows the component reviews and determines whether the subsystem detailed design satisfies the design-to baseline; risks are mitigated and remaining risks are acceptable; issues for all components, assemblies, and life-cycle processes are resolved; and accomplishments and plans warrant continuation with FAIT.

The CDR System review takes place after completion of subsystem detailed design reviews to determine whether the detailed design of the system satisfies the system baseline; unacceptable risks are mitigated; issues for all subsystems, products, and life-cycle processes are resolved; accomplishments and plans satisfy criteria for continuation of the technical effort; and the system is ready to continue into FAIT by having resolved outstanding product or life-cycle process issues.

Technical Performance-Based EV

The SE standards have common elements for basing earned value on technical performance; the use of product metrics, including TPMs; measurement of quality and design maturity; and definition of exit criteria for technical reviews.

An important control for ensuring integration of a project's technical performance objectives is to use these elements as exit criteria for work packages and for interim progress measurement. For example, the completion criteria of a work package should include both the enabling work products, such as drawings or software code, and meeting the requirements, such as weight limits or the allocated functional requirements. When earned value is based on technical performance, it will be a valid, reliable indicator of program status.

Earned value can also be a valid basis for award fee determination if it is tied to technical performance, not just to work accomplished. The 2004 *Defense AT&L* article mentioned earlier cautioned that EVM data will be reliable and accurate only if the right base measures of technical performance are selected and if progress is objectively assessed. If you are measuring the wrong things or not measuring the right way, then EVM may be more costly to administer and may provide less management value. The GAO had similar findings regarding EVM and technical performance goals. GAO Report 06-250 found that EVM can have an impact on acquisition success if properly implemented; however, if not implemented effectively, decisions may be based on inaccurate and potentially misleading EVM information.

Performance-based earned value will meet the Office of Management and Budget Circular No. A-11 requirement for a performance-based acquisition management system based on EVMS, for capital investments that mea-

Continued on page 44

DoD's Information Gateway

The Research and Engineering Portal

Sandy Schwalb ▪ *Datrecia P. Edwards*

What is the Department of Defense doing in research and engineering (R&E)? When will the work be completed? Why is the work being done? Who is the point of contact?

Federal employees can find answers to these and other questions in the DoD R&E Portal at <https://rdte.osd.mil>.

Schwalb *is DTIC's public affairs officer. She has worked for a U.S. senator and was a speechwriter at the U.S. Government Printing Office.* **Edwards** *is a program analyst for DTIC.*

A joint effort of the Office of the Director, Defense Research & Engineering (DDR&E) and the Defense Technical Information Center, the Portal provides single-sign-on access to current and historical DoD R&E information, including DTIC technical data resources.

Easy Access to Data

The timescale for getting the answers to operational and technical questions is getting shorter all the time. Efficient access to accurate technical information is vital to ensure that warfighters today and tomorrow have superior and affordable technology. In 2004, DDR&E initiated a request for a single Web site that offers tools to take technical data that have been and continue to be collected, and make them into knowledge that can support decision making. DTIC responded to this request by launching the R&E Portal in April 2005. The R&E Portal allows every DoD program manager, planner, researcher, acquisition professional, tester, and operator find, from their desktop computer:

- All current R&E electronic information
- R&E points of contact
- Scientific and technical news from 2,300 news sources
- AT&L links, such as Science & Technology Acquisition Workforce.

Overall, the Portal improves government-to-government as well as government-to-business communication within the DoD and the larger government communities. Portal users, who are at all organizational levels from Pentagon managers, planners, and policymakers, to bench-level researchers at DoD laboratories and other research activities, can access comprehensive technical information quickly and easily.

- Policy-makers and managers at the Pentagon have easy access to current budget information and the latest congressional developments.
- Military service and defense agency managers maintain awareness of communications from the Pentagon and of recent congressional activities that will affect their individual organizations.
- Laboratory managers access statistics and financial information of importance.
- Researchers can discover details about projects and programs related to their areas of investigation.

The R&E Portal is their solution of choice, making the R&E Portal DTIC's number one priority.

Explore R&E Portal Applications

As a working research tool, the Portal brings together 22 Web applications (quick links to databases) that support the DoD research and development (R&D) strategic planning and the congressional reporting process, including:

- Defense Science and Technology Planning (DSTP), which provides the latest DoD R&D planning documents describing key technology areas and programs
- Congressional Budget Queries Tool, which tracks and annotates congressional changes or "markups" to the Research, Development, Testing, and Evaluation (RDT&E) budget
- Defense Technology Search (DTS), which enables a single search request to retrieve information from the Portal contents as well as DTIC's vast collection of scientific and technical information.

Defense Science and Technology Planning

Want to know the DoD's strategic considerations for technology? Then visit the DSTP Web site in the R&E Portal. This R&E application outlines the defense science and technology strategy for determining appropriate technology, and the basic research plan describing DoD-sponsored fundamental research available to Portal users. Also available for viewing are the defense technology objectives that identify special-emphasis technology, and the defense technology area plan for applied research and advanced technology development. Searching for a joint perspective on technology? The DSTP allows users to access the Joint Warfighting Science and Technology Plan. There, Portal users will find applied research plans and advanced technology development plans in support of priority future joint warfighting capabilities.

Congressional Budget Query Tool

How important are congressional budget changes to the DoD? According to Deputy Secretary of Defense Gordon England, "Congressional marks are of interest throughout the defense enterprise." For this reason, the Congressional Budget Query Tool responds rapidly to changes (or "marks") proposed by Congress to the RDT&E budget. Stored in a database on the R&E Portal are the President's Budget Request data for all DoD RDT&E program elements and marks from the House Armed Services Committee, Senate Armed Services Committee, Authorization Conference, House Appropriations Committee, Senate Appropriations Committee, and the Appropriations Conference. Markups are easily queried by fiscal year, budget activity, Service or agency, and percentage of increase or decrease. The database currently includes only RDT&E accounts. It will soon include procurement and operations and maintenance accounts.

Defense Technology Search

Search across multiple libraries and get back current DoD technical data using the DTS. This tool enables a single search request to retrieve information from the Portal contents as well as DTIC's vast collection of scientific and technical information. In addition to DTIC's historical and ongoing research documentation collections (technical reports, research summaries, and independent research and development), other collections are available, including biological research data, DoD budget data, the DoD Information Analysis Centers' Total Electronic Migration System (TEMS), and e-Gov (electronic govern-

ment) data. Users can also conduct a DoD-wide search of all public DoD Web sites, as well as federated resources such as Science.gov and FirstGov.gov, the U.S. government's official Web portal.

Upload e-Gov Data

The Portal is also the means by which the DoD satisfies the reporting requirements of the Electronic Government Act of 2002. One of the key Portal mechanisms is for the military services and defense agencies to upload e-Gov reporting data, allowing the Department to submit the information in a consistent, accountable manner. John Young Jr., the current DDR&E, supports this effort, since he envisions e-Gov data reuse as having the ability "to establish return on investment for taxpayer investment and to give project contact points for use in possible collaborative efforts." To that end, the DoD e-Gov database on the Portal provides a centralized location for information about DoD research and development. The library contains consolidated data from inputs submitted by the DoD Services and agencies in response to each annual data call. The current library contains more than 16,000 records on DoD R&E efforts. Information in the library includes responsible and performing organizations and individuals, descriptive information (objective, approach, and progress), associated program elements and their funding, and metrics.

Supporting the Warfighter

The Portal continues to transform data in its next phase of development. A planned e-mail notification system will inform users when new R&E information (reports, data, and news) has been added to the Portal. In addition, business intelligence tools will allow its 12,000 registered users to establish relationships or patterns, design and generate reports from data sources, and discover business performance management strategies for using resources effectively. With its current 22 Web applications and planned new features, the R&E Portal facilitates all levels of the defense research community as well as other government agencies and private- and academic-sector organizations. Essentially, the centralized, single-sign-on R&E Portal reduces time and effort by providing a wide variety of the latest R&D information. The DoD R&E Portal provides easy access to R&E information and ensures that new technologies get into the hands of the warfighter as quickly as possible.

Access to the R&E Portal is controlled by the DTIC registration process and is limited to federal employees and federal contractors. Go to <https://register.dtic.mil/DTIC> for registration information; for more information about the R&E Portal, contact rdte_help@dtic.mil.

SE and EVM ... continued from page 41

sure progress towards milestones in terms of capability of the investment to meet specified requirements and quality.

Contractual Performance-Based Progress and Incentives

DoD customers should use performance-based acquisition management by including requirements and award fee incentives for performance-based management and reporting in their contracts, beginning with the solicitation. Then the program manager can link award fees to achieving desired program outcomes. Earned value will provide insight that is based on technical performance if the contractor is required to link discrete work packages to milestones for key technical and management deliverables. A sample of those deliverables follows:

- Success criteria for major technical reviews
- TPM planned values and measurement milestones
- Master schedule that identifies all systems engineering products, such as the technical baselines and requirements traceability matrices; identifies TPM planned value milestones; and is linked to the identified success criteria
- Product metrics reports.

The Air Force Space and Missile Systems Center, Air Force Space Command, published and uses a comprehensive Technical Operating Report (TOR) that specifies contractual requirements for the conduct of a complete, integrated SE effort. The requirements are defined in terms of the required SE products and the required attributes of those products. For example, it states that "the Contractor SHALL monitor the progress against all planning" and prepare documented assessments that include TPMs and "metrics and selected technical parameters for tracking that are critical indicators of technical progress and achievement." The TOR is used to prepare the requests for proposal and for evaluating the contractor's SE products once on contract.

The TOR is an excellent document for defining and monitoring the contractor's SE efforts. I recommend that the contractually required TPMs and metrics be used for award fee determination. The TOR is available at <www.PB-EV.com> within PBEV Resources. If a program manager specifies contractual requirements for the conduct of a complete, integrated SE effort, then award fees may be used to focus contractor efforts on meeting or exceeding cost, schedule, and performance requirements.

The author welcomes comments and questions. Contact him at paul.solomon@pb-ev.com.

Meet the AT&L Workforce

Air Force **Maj. Dan Ward** (left) and Air Force **Maj. Chris Quaid** (right) are among *Defense AT&L*'s most prolific authors. We're often asked, "Who are those guys, and why do they keep writing that weird stuff?" So—deviating somewhat from the regular format—here's the who and the why of two unusual members of the AT&L workforce.

Readers know from your articles that you aspire to be anything from pirates to punk rock stars. What about your day jobs?

Ward. I'm special assistant to Dr. John Bay, chief scientist of the Air Force Research Lab's Information Directorate in Rome, N.Y. I've done everything from risk management to security accreditation to writing requirements to designing and executing a user training program, all under the general heading of program management and developmental engineering.

Quaid. As a space operator with a secondary career field in program management, I've been assigned to the Pentagon Air Staff to work issues involving the future space radar satellite, national space issues, and the intelligence community. Right now, I'm preparing to deploy with the Army in support of Operation Enduring Freedom.

What do you find most satisfying about what you do?

Ward. I love being an Air Force officer, because it gives me the opportunity to be a bit of a renaissance man. I get to do technical engineering stuff along with a lot of public speaking, leadership, writing for publication, and rubbing shoulders with warfighters.

Quaid. I feel fortunate that by serving in the military, I—in some small way—have the opportunity to help set a course for the nation that ultimately shapes our environment and standards of living economically, ethically, and socially.

What frustrates you the most at work and in general?

Ward. Apathy, cynicism, and satisfaction with the status quo are probably in my Top Ten.

Quaid. Widespread cultural departure from the rogue entrepreneurial and pioneering spirit that founded this nation in return for risk-avoiding, apathetic methods of operation.

To what do you attribute your success as program managers?

Quaid. Having a bias for action. We could wait for 15 studies, ask for 10 layers of permission, make ourselves feel good with unanimous consensus. But the reality is that we continue to find ways to execute; and even if they aren't perfect, they're still faster, better, and cheaper than waiting for the perfect solution that never will show up.

Any advice for up-and-coming program managers?

Ward. Take risks. It's a new world and a new kind of war (isn't it always?) so don't count on old ways, assumptions, and processes to help very much. You've got two groups to focus on satisfying—the warfighters and the taxpayers—and you might be surprised how closely their interests are aligned. Notice I didn't mention the chain of command?

Your articles often rock the boat. Do they ever get you into trouble?

Quaid. Quite the opposite. We've had a lot of positive feedback—and job offers, too—from some pretty important people.

Tell us something about your early lives.

Attention AT&L PEOs, PMs, Managers, and Supervisors

Do you have an employee you'd like to see recognized in *Meet the AT&L Workforce*—someone who works behind the scenes to support your organization?

Send us the name, military rank (if appropriate), job title, defense agency/Service affiliation, and home or business mailing address, plus the employee's responses to the italicized questions above. Please include your own contact information, and spell out all acronyms. Profile responses may be edited.

Information may be e-mailed (preferably in a Word file) to defenseatl@dau.mil. We will contact you only if your nominee is selected for publication.

Photographs: Only submissions with photographs will be considered. A casual photograph, not a formal bio portrait, is preferred. Submit a high-resolution digital file (300 dpi with a final print size no less than 3 x 5 inches), or mail a traditional photo to the address on page 1. *Photographs cannot be returned.*

Ward. I did my first magic show when I was 10 years old and worked my way through high school and college doing magic, juggling, and making balloon animals at birthday parties, libraries, hospitals, and restaurants. I've also been a fire-eater for 14 years. [*Editor's note: This is no joke; I've seen the photos*.]

Quaid. I began working at 15 as a gymnastics and cheerleader instructor—great work if you can get it! In college I studied psychology (or something like that) when I wasn't participating heavily in ROTC and continuing to work as a cheerleader instructor.

Finally, writing—especially the innovative kind you do—takes a lot of time. Why do you do it?
Ward. Because it's fun, and because we think we've got things to say that people need to hear. We love incongruity: for example, painting the captain of a pirate ship as a program manager, using punk rock as a model for 21st century acquisitions, telling a fairy tale in a modern voice.

Quaid. In this very serious business, we use humor and draw unexpected parallels to get our points across in ways we hope will be memorable.

You're the Judge: The Verdict

(from page 14)

The Verdict
The general rule is that federal personnel may not accept gifts from prohibited sources, including contractors and contractor personnel. The applicable law is 5 C.F.R. Part 2635 Subpart B sections 201-205.

There are some exceptions. The exception that applies here states that a federal employee may generally attend an open house or reception and accept any gift of refreshments if the gathering is widely attended, and if the employee's supervisor determines that it is in the agency's interest that the employee attend. The Office of Government Ethics provides a brief synopsis of the exceptions at <www.usoge.gov/pages/common_ethics_issues/common_ethics_issues_pg2.html#An chor--Gif-60385>.

Should Joe and his Colleagues Attend?
The proposed dinner meets the widely attended gathering criterion. But is it in the agency's best interest that Joe and his colleagues attend? In this case, after consulting with the Office of General Counsel, Joe's supervisor decided attendance was not advisable and instructed the employees not to attend the party. The office was in the process of evaluating several bids for services, including some they expected the party-hosting contractor to bid on, so attendance at the event could be perceived as an attempt by the contractor to influence current bids. Even though the contractor event had been planned and announced months in advance, a competitive bidder could have perceived a linkage and later used attendance at the dinner to protest contract decisions adverse to his/her company.

What About Bob?
Does Bob's assignment to a different government agency impact his decision? In this case, the answer is "yes." Prior to arrival at his gaining command, Bob consulted with the government agency's Office of General Counsel. After considering information on food costs (approximately $65 not counting bar costs), evaluating Bob's prospective duties, and taking into account Bob's arrival at the gaining commend before the date of the party, the new agency decided that he could attend the event.

Each employee must be aware of the laws governing gifts from outside sources. Consulting the Standards of Conduct Office at <www.dod.mil/dodgc/defense_ethics/main.html> will enable you to reach the right decision. Be sure to supply all the information; accurate advice depends on knowing all the facts.

From Our Readers

Making the Contract Type Fit the Program

Republican Sen. John McCain of Arizona, the vice chairman of the Senate Armed Services Committee, recently proposed limiting the Pentagon to fixed-price contracts for weapon programs. In considering this proposal, it is worth reviewing available contract types and past policy in applying contract types.

First, the two main contract types are fixed-price and cost-plus. Fixed-price contracts place greater risk on defense contractors to deliver a weapon system at a quoted cost. If uncertainty exists, contractor proposals can be expected to have higher prices to compensate for any added risk. Cost-plus contracts allow the government and contractor to share risk by giving the government the option to continue funding a weapon program above a contractor's initial estimate.

Second, past reform initiatives appear to follow the swings of a pendulum. In the mid-1960s, for example, the objective of "Total Procurement" was to transfer more risk to defense contractors by competitively bidding fixed-price contracts over both development and production phases of a weapon system. The expected advantages included avoiding "low-ball" bidding of development contracts, and obtaining production price commitments from contractors. The focus on awarding more fixed-price contracts resulted in cost-plus contracts going from the most common contract type to less than 5 percent of Air Force procurement dollars by 1966, according to G. Brunner and G. Hall in a 1968 publication "Air Force Procurement Practices 1964-1966." Problems with Total Procurement resulted in a July 1969 memorandum by then Deputy Secretary of Defense David Packard advocating cost-plus contracts for development and fixed-price contracts for production of weapon systems. This guidance appears to have remained consistent until 1980, when the emphasis shifted again toward fixed-price contracts for all phases of a weapon program. The use of a fixed-price contract proved to be a mistake on the now successful Advanced Medium Range Air-to-Air Missile development contract. Awarded in 1981, the AMRAAM contract experienced significant cost growth and schedule delays that led to a complete restructuring of the program by 1985. Current practice is consistent with then Deputy Secretary of Defense Frank Carlucci's reform initiative from 1981 that advocated the use of appropriate contract types.

In general, fixed-price contracts are more appropriate for production contracts where costs are either known or easily predicted, and cost-plus contracts are more appropriate in situations—such as development—where costs are uncertain. Over time, safeguards have also been established to avoid defense contractor misuse of cost-plus contracts. For example, government personnel with the Defense Contract Management Agency provide on-site inspections of defense contractor facilities and work, and Defense Contract Audit Agency personnel perform audits of contract costs to ensure they are appropriate.

In light of available safeguards, a review of past reform efforts suggests that mandating a single contract type is not better than matching the unique circumstances of a weapon program with an appropriate contract type.

David R. King, Ph.D.
Dayton, Ohio

Quaid and Ward Strike a Chord

Congratulations to Majors Quaid and Ward on their article "It's All About the Talent" in the November-December 2006 issue. It is excellent! As a former assistant secretary of the Army, former deputy assistant secretary of the Air Force, and former chair of the DAU Board of Visitors, the article hit a strong positive chord. Their message needs to be heeded by the USD (AT&L), as well as by the Army, Navy, and Air Force. As long as DoD continues to assign people with modest acquisition training and experience to important acquisition positions, DoD will continue to have the problems that it experiences on major acquisition programs.

The military services have outstanding programs for selection, training, and experience of military personnel assigned to important positions in military operations. If DoD adopted practices for acquisition comparable to those it uses in placing people in skilled,

demanding operational assignments, the record for defense acquisition programs would be far more attractive.

Many thanks for taking the time to write an article about such an important topic.

J. Ronald Fox
Professor Emeritus
Harvard Business School

I am a recently retired Air Force officer—Systems Engineering, Acquisition type. I now do what I always did for the AF, but in a contractor suit these days.

Whatever you do with your journal, I would like to suggest you keep Major Ward and Major Quaid as permanent contributing authors. They have a way of getting to the essence of an issue in a way that is very readable & enjoyable. The first thing I look for in a new issue of *Defense AT&L* is an article by Ward/Quaid. Many times it is the only thing I read in the journal.

It's not just because they are "funny" (and they are), but it is because they hit the bull's eye every time. Their most recent article on "It's All About the Talent" (Nov-Dec 2006) is a perfect example. If I see another commission or report about what is wrong with the acquisition system, I think I will be sick.

Anyway, I don't know if you or the two of them take a lot of grief for what they write—but it is refreshing to see someone tell the emperor he has no clothes.

Tommy Ray
Booz | Allen | Hamilton

Editor's note: Far from taking grief, Majors Quaid and Ward have received numerous job offers on the basis of their often-edgy articles in Defense AT&L.

We're Looking For A Few Good Authors

Got opinions to air? Interested in passing on lessons learned from your project or program? Willing to share your expertise with the acquisition community? Want to help change the way DoD does business?

You're just the person we're looking for.

Write an article (no longer than 2,500 words) and *Defense AT&L* will consider it for publication. Our readers are interested in real-life, hands-on experiences that will help them expand their knowledge and do their jobs better.

What's In It For You?

First off, seeing your name in print is quite a kick. But more than that, publishing in *Defense AT&L* can help advance your career. One of our authors has even been offered jobs on the basis of articles written for the magazine.

Now we can't promise you a new job, but many of our authors:

- Earn continuous learning points
- Gain recognition as subject matter experts
- Are invited to speak at conferences or symposia
- Get promoted or rewarded.

For more information and advice on how to submit your manuscript, check the writer's guidelines at <**www.dau.mil/pubs/damtoc.asp**> or contact the managing editor at **defenseatl@dau.mil**.

If you're interested in having longer, scholarly articles considered for publication in the *Defense Acquisition Review Journal*, or if you're a subject matter expert and would be willing to referee articles, contact the managing editor at **defensearj@dau.mil**. Be sure to check the guidelines for authors at <**www.dau.mil/pubs/arq/arqtoc.asp**>.

In the News

AERONAUTICAL SYSTEMS CENTER PUBLIC AFFAIRS (AUG. 22, 2006)

SMALL-DIAMETER BOMB READY FOR WAR ON TERROR

Capt. Bob Everdeen, USAF

WRIGHT-PATTERSON AIR FORCE BASE, Ohio—Four major acquisition programs—developed in parallel—have come together to provide Air Force F-15E Strike Eagle crews with a revolutionary capability that combines accuracy and reduced collateral damage.

Military and civilian employees in seven locations worked together developing the four new capabilities—small-diameter bomb, advanced display core processor, joint mission planning system, and the operational flight program software, better known as Suite 5. The final, combined product, which includes four additional smart weapons stations, was delivered to Air Force pilots at Royal Air Force Lakenheath, United Kingdom, last month, eight weeks ahead of schedule and $26.9 million under budget.

"If you would have put all of us in a room last summer and asked us how we were going to make (the deadline), we probably would've said, 'This is new territory for all of us,'" said George Spencer, the 912th Aeronautical Systems Group director in charge of F-15 systems here. "Because of all the things going on, there were some significant hurdles we had to overcome, but we had a team of seven organizations that were fully committed to making this program succeed."

The key capability delivered to warfighters is the GBU-39 250-pound small-diameter bomb—a munition capable of raining pinpoint precision explosions on enemy targets from 60 miles away while minimizing collateral damage.

Staff Sgt. Randy Broome (left) and Airman 1st Class Robert Branham unload a bomb rack unit-61 from a munitions trailer at Royal Air Force Lakenheath, United Kingdom, Aug. 1. The bomb rack fits on F-15E Strike Eagle fighter jets and holds guided bomb unit-39 small-diameter bombs. The small-diameter bomb was one of four new capabilities recently delivered to warfighters, eight weeks ahead of schedule and $26.9 million under budget, by the Air Force Materiel Command enterprise team at Wright-Patterson Air Force Base, Ohio. U.S. Air Force photograph by Master Sgt. Lance Cheung

"Previously in urban warfare, forces surrounding a building with insurgents or terrorists inside had two choices: air strikes to destroy the building, which created significant damage to nearby structures; or sending in ground troops, putting their lives at risk," said Col. Richard Justice, the 918th AESG commander and small-diameter bomb program manager at Eglin AFB, Fla. "U.S. military rules of engagement dictate that we avoid or minimize death or injury to innocent people 'next door.' F-15s equipped with these four new capabilities can send in a much smaller bomb, which can strike within six feet of the aim point."

In July, the first F-15Es were fitted with a training version of small-diameter bomb racks with electronics that allow jets to drop simulated bombs. After one of the sorties, Lt. Col. Will Reese, the 494th Fighter Squadron commander at RAF Lakenheath said, "Our four-ship (of F-15s) hit 16 targets with 16 bombs in one pass. In Operation Desert Storm you could expect one plane loaded with six bombs to destroy one target. Now we can use one bomb per target, and each aircraft can carry up to 16 bombs."

Getting to that milestone was not easy. One program had many technical and programmatic problems to be resolved; and simultaneous development of two major software packages and two complex hardware programs was challenging for all. Behind all of the troubles was an unrelenting reminder that if one of the four programs was not ready on time, the entire endeavor was at risk.

"It was a tremendous effort by the overall Air Force Materiel Command enterprise team that required a phenomenal amount of communication and coordination to bring all these interrelated capabilities together at the right time," said Lt. Col. Ed Offutt, the 912th AESG Strike Eagle team leader. "If any team member made a change, it had to be communicated to everyone else because it could affect their progress as well."

The allocation of requirements to the contractor team at Boeing and its major supplier, Honeywell, to develop the new capability was driven by a vision of weapon system capability for warfighters.

"Integrating a new, complex (operational flight program) with a new core processor and precision weapon was a great challenge," said Nanette Soehngen, Boeing's F-15 development programs manager. "Boeing and Honeywell are very proud to be part of the Air Force team that got it done."

At the same time, the small-diameter bomb team was completing a development program of 42 launches with a 95-percent success rate, on cost and on schedule.

Everdeen is with Aeronautical Systems Center Public Affairs at Wright-Patterson Air Force Base, Ohio.

ARMY NEWS RELEASE (AUG. 23, 2006)
ARMY REACHES MILESTONE IN FCS MODERNIZATION PROGRAM

ARLINGTON—The Army moved closer to transforming itself into a more relevant, capable, and ready 21st-century force Aug. 11 when officials completed the In-Process Preliminary Design Review (IPDR) of its principal modernization effort, the Future Combat Systems program.

The IPDR is the latest in a series of program milestones that confirms FCS modernization meets the Army's cost projections, time schedule, and performance expectations. With requirements and functionality for all 18 FCS systems defined, hardware and software can now be designed and tested.

"IPDR represents the transition from requirements to design, build, integrate, and test," said Maj. Gen. Charles Cartwright, FCS program manager. "Within a year, FCS capabilities will begin to be integrated into the current force through our Evaluation Brigade Combat Team. The EBCT will provide a structure that will allow us to test, validate, and then deliver to our soldiers new capabilities that are specifically designed to address 21st century threats. Our Army and our troops require these new FCS capabilities sooner rather than later."

FCS modernization will now focus on delivering Spin-Out 1 capabilities to the EBCT, which will be stood up early next year at Fort Bliss, Texas, to evaluate, test, and refine Intelligent Munitions Systems, Unattended Ground Sensors, the Non-Line of Sight Launch System, and an early version of the FCS Networked Battle Command.

Both the FCS spin-outs and the EBCT are part and parcel of a concerted Army effort to deliver crucial new capabilities to the current force as soon as possible. Spin-outs of FCS technologies to the EBCT will begin in 2008 and continue every two years thereafter.

FCS is a cornerstone of a more comprehensive Army modernization effort that also includes developing a more modular or versatile force, with greater joint and expeditionary capabilities. Toward that end, FCS includes a

suite of 18 manned and unmanned systems, air and ground vehicles, all interconnected by a modern network to give soldiers unprecedented situational awareness and new capabilities to address 21st century threats. The 18 systems include Manned Ground Vehicles, Unmanned Aerial Vehicles, Unmanned Ground Vehicles, and such spin-out technologies as the Non-Line of Sight Launch System, Intelligent Munitions Systems, and Unattended Ground Sensors.

During the IPDR, each system team provided a detailed technical work plan for the next two years. The IPDR also included a review of all layers of the FCS Network, embedded training, modeling and simulation, logistics and supportability functions, and complementary programs.

The IPDR also demonstrated the maturity of the overall FCS baseline design concept. The review found that critical FCS technologies are maturing on schedule; program risks are well understood; and these risks are being actively—and successfully—managed.

FCS is the Army's first modernization effort in almost four decades. Program costs have remained steady and constant: $120 billion (FY03 constant dollars) for Research, Development, Test and Evaluation (RDT&E) plus procurement in the next two decades.

FCS modernization costs increased in 2004 when the Army increased the program's size and scope to speed the delivery of more modern capabilities to frontline troops.

The concurrent procurement of 18 systems in tandem has reduced system development and demonstration costs by an estimated $12 billion, while shrinking the development-to-field timeline by about 30 percent.

"Army modernization is saving taxpayers time and money, while giving our soldiers lifesaving, state-of-the-art capabilities sooner rather than later. This makes FCS the Army's most critical investment requirement," said Cartwright.

ARMY NEWS SERVICE (AUG. 29, 2006)
STRYKER TEAMS TRAIN WITH NEW VEHICLES

Jason Kaye

FORT LEWIS, Wash.—A long wait is over for Stryker Mobile Gun System (MGS) crews of the 4th Brigade, 2nd Infantry Division.

The 2nd Battalion, 23rd Infantry, received its complement of MGS vehicles last month after more than a year of waiting. They are the first vehicles to be fielded in the Army.

"I think its going to give the infantry a whole new dimension of what they can do. Armor and infantry have kept each other at arm's length for years and years," said Sgt. 1st Class David Cooper, an MGS platoon sergeant with B Company, 2-23 Inf. "We've got some growing pains, but once we get out there and they see what we can do, we're going to be everybody's friend."

Each infantry company is slated to receive three vehicles, though crews don't expect to operate together except on rare occasions.

The vehicles carry crews of three, and are equipped with a 105 mm main gun and a state-of-the-art fire control system. The MGS also has an onboard coaxial machine gun that's fire-controlled.

"You can literally shoot smiley faces with it at 900 meters," said Cooper. "Even minus the big gun we can give the infantry a lot of support."

The 105 mm is capable of firing four types of rounds: SABOT, a depleted-uranium armor-piercing round; HEAT, high-explosive anti-tank; HEP, high-explosive plastic; and a canister round. The rounds are loaded using a hydraulic auto-loader in the rear of the vehicle.

The HEP and canister rounds give Stryker units new capabilities, especially in urban areas. The HEP can blow holes in reinforced concrete walls, but unlike the rounds from an Abrams, won't continue through the target and into surrounding buildings. The canister provides an effective anti-personnel capability.

"The vehicle's basic role is to support the infantry. It's not there to take on tanks or go toe-to-toe in the wide-open desert like we did with the Abrams," said Sgt. 1st Class William Ozmet, an MGS instructor from Fort Knox, Ky. "Its primary function is blowing a hole in the wall or blowing up bunkers."

Over the past year, the crews have been training with TOW-ITAS Humvees or other Stryker variants. Finally having the vehicles gives the crews a chance to delve into training.

Soldiers from 2nd Battalion, 23rd Infantry, train with the new Stryker Mobile Gun System in August 2006 at Fort Lewis, Wash.
Photo by Jason Kaye

"I can actually start focusing on our training, both on our mission tasks and working with the infantry," said 1st Lt. Christopher Lilley, the MGS platoon leader in B Co.

The MGS also comes equipped with training software that allows soldiers to train on various engagements in their own vehicles, instead of going to a simulator somewhere else.

Once the 4th Bde. completes training, instructors from General Dynamics Land Systems will move on to equip and train soldiers in Hawaii and Pennsylvania. Training for those units may change according to lessons learned at Fort Lewis, but the vehicle itself is expected to remain mostly unchanged.

"I'm confident that this will turn out to be a successful piece of equipment for us, the infantry, and the Army," said Lilley.

Kaye is on the staff of the Fort Lewis Northwest Guardian, *the authorized newspaper for Fort Lewis, Wash.*

U.S. ARMY SOLDIER SYSTEMS CENTER (SEPT. 7, 2006)

ARMY'S FUTURE FORCE WARRIOR PASSES MAJOR MILESTONE

NATICK, Mass.—The Army's Future Force Warrior system is one step closer to being fielded as the Ground Soldier System following a successful demonstration in August of its electronic networking capability.

Developed and managed by the U.S. Army Natick Soldier Center with General Dynamics C4 Systems as the lead integrator, FFW is the Army's flagship science and technology program, aimed at integrating "best in class" technologies from the Army's Research, Development, and Engineering Command (RDECOM) enterprise, other government agencies, and industry to enhance the combat effectiveness of the soldier and small combat unit.

This marks a major milestone for the program, said Carol Fitzgerald, program manager for the FFW Advanced Technology Demonstration.

"This was the first of two incremental design phases. We have successfully demonstrated network interoperability of the soldier/small combat unit with the future force network," she said. "This achievement satisfied the program's top level goal for its first incremental design and was completed three months ahead of schedule."

According to Fitzgerald, the FFW Technology Program Office delivered early prototypes of the "Increment 2" design, enabling risk reduction of the system that will continue to be enhanced throughout the remainder of the program, which is scheduled to conclude in late 2007.

To achieve this success, NSC has worked with a number of its sister centers, including the Communications and Electronics Research, Development and Engineering Center (CERDEC).

"Natick participated in CERDEC's Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) On-the-Move program," said Fitzgerald. "This allowed us to leverage an important Army field experimentation venue to assess multiple developmental technologies addressing future force network integration, including FFW."

As the lead organization for the FFW ATD, NSC is responsible for the successful integration of all FFW-related technologies developed by government and non-government partners and ensuring that the final product seamlessly incorporates state-of-the-art technologies into one soldier-friendly package.

"Through NSC's participation in this experiment, the Army has gained valuable soldier feedback on network/communications capabilities as well as soldier acceptance feedback regarding the many aspects of the advanced FFW combat ensemble," said Fitzgerald.

The FFW Increment 1 capabilities demonstrated at the OTM included: SCU integration into the future force network via the Soldier Radio Waveform; demonstration of the Soldier Protective Individual Equipment System, an advanced body armor and load carriage system; demonstration of cooperative engagement/networked fires using digital target handoff and Non Line of Sight fire; demonstration of headgear thermal and Image-Intensification sensor fusion; demonstration of system voice control; and simulation of physiological status monitoring.

In addition, the FFW early Increment 2 capabilities demonstrated at OTM included: demonstration of Leader

The Army's Future Force Warrior system is one step closer to being fielded as the Ground Soldier System following a successful demonstration in August of its electronic networking capability. Photograph courtesy U.S. Army Natick Soldier Center

level Command and Control via FalconView (leveraged from the Air Force), system voice control, integrated Class I Unmanned Aerial Vehicle imagery, look-down display integrated into combat goggles, and advanced power management devices to extend mission duration; demonstration of Soldier-level Situational Awareness leveraged from CERDEC's Command and Control Mobile Intelligent Net-Centric Computing System program; Warrior Physiological Status Monitoring; and deeper integration of electronics into the FFW combat ensemble.

Fitzgerald said that the FFW is spiraling mature components to enhance the Program Executive Office Soldier's Land Warrior system, designed for Stryker and current force interoperability.

"FFW will transition to the PEO Soldier in fiscal year 2008 to support the Army Requirements Oversight Council-approved Ground Soldier System—the next version of Land Warrior, which supports Future Combat Systems and future force interoperability," she said.

"FFW participation in this major Army experimentation venue helps the Future Combat Systems program address their risks of dismounted soldier integration into FCS," said Fitzgerald. "The FFW ATD is scheduled to conclude at the end of 2007, with participation in C4ISR OTM 07 and Air Assault Expeditionary Force/Spiral D serving as the culminating events."

NAVY NEWSSTAND (SEPT. 9, 2006)
FIRST LADY LAURA BUSH WELCOMES USS TEXAS TO THE FLEET

Mass Communication Specialist 1st Class Barrie Barber, USN

GALVESTON, Texas—First lady Laura Bush ordered the sailors of *USS Texas* (SSN 775) to bring the U.S. Navy's newest nuclear-powered attack submarine to life in a Sept. 9 commissioning ceremony in the Lone Star State.

As the crew rushed aboard the submarine before 10,000 spectators at the Port of Galveston, two F/A-18 Hornets roared across the sky, followed by a formation of three World War II-era Navy warplanes.

The first lady, the boat's sponsor and a native Texan, told the crew the country will depend on them to defend democracy and freedom in the era of the global war on terrorism.

"People of a great nation are trusting you to keep them safe," she told the sailors, adding the people of a great state are trusting them to carry the state's—and the submarine's—motto to the far corners of the globe: "*Don't Mess With Texas*."

"Every time the *Texas* sails, you can be justifiably proud that she carries a piece of each of you with her," said Adm. Michael Mullen, chief of Naval Operations, noting the state's fighting tradition has led thousands of Texans today to serve in uniform worldwide.

The crew and submarine will build on the legacy of the two battleships and one cruiser that have borne the name Texas since the late 19th century, the first lady said. The second *Texas* (BB 35), for example, bombarded Iwo Jima and Okinawa during World War II.

"In the face of tremendous danger, they put aside their fears to take up the cause of freedom," she said.

The *Texas*, she said, embodies the best ideals of its home state: endurance, courage, loyalty, and stealth.

U.S. Sen. Kay Bailey Hutchison, a Galveston native, said her hometown has had strong historical ties to the Navy. The city was the homeport to the Texas navy that fought for independence from Mexico, she said, and is home to *USS Seawolf* (SS 197), a decommissioned World War II submarine.

"We are a state that loves our heritage and we have a deep respect for our nation's military," she said.

Machinist's Mate 3rd Class Benjamin A. McTee said *Texas* was his top choice of submarines he wanted to serve aboard because he's a native Texan.

The crew, he said, is anxious to set out to sea.

"I'm ready to see it come to life," he said. "It's been a long road and (the sailors are) ready to get out of the shipyard."

The sub arrives in the fleet as the second Virginia-class vessel, and it will be homeported at Submarine Base New London in Groton, Conn.

U.S. Sen. John Cornyn, the ceremony's principal speaker, said the warship stands as a testament to the nation's unwavering commitment to stand up to extremism in the aftermath of the Sept. 11, 2001, terrorist attacks.

Accompanied by Command Master Chief Mark Brooks, center-left, and Commanding Officer John J. Litherland, center-right, First Lady Laura Bush delivers her remarks and orders the ship to life, as the boat's official sponsor, during the commissioning ceremony for the Virginia-class submarine *USS Texas* (SSN 775). The high-tech attack boat, with a crew of 134, sails into history as the first post-Cold War class of submarine designed for battlespace dominance against 21st century adversaries lurking in deep waters, near shore environments, or on land. The 377-foot-long sub, with a weight of more than 7,800 tons submerged, has the capability to travel more than 25 knots and dive below 800 feet. It has the ability to carry torpedoes, mines, cruise missiles, and transport Naval Special Warfare SEALs (Sea, Air, Land) around the world.
U.S. Navy photograph by Lt. Mark Jones, USN

"America has learned the hard way the best guarantor of peace is a strong military," the Texas senator said. "Our nation builds weapons of war so we may live in peace."

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"*Texas* is a very elegant ship, but it is very lethal," said Mike Petters, president of Northrup Grumman Newport News in Newport News, Va., lead contractor that built the vessel in partnership with Groton, Conn.-based General Dynamics Electronic Boat.

Virginia-class submarines rank as the first to have an information systems technology department because of the heavy use of computers aboard the vessel. For example, photonic masts that don't penetrate the surface have replaced the traditional periscope, and more than 60 computer and information screens fill the control

room. The sub's Multi-Mission Module will allow crews to use the latest technological equipment.

The nuclear-powered sub's reactor plant will not require refueling during the boat's planned lifespan.

The Navy has a planned class size of 30 vessels. More than 4,000 suppliers in 47 states and the District of Columbia produce millions of parts for the submarines.

The Naval Air Station Fort Worth Joint Reserve-based Navy Reserve squadron, Strike Fighter Squadron (VFA) 201 Hunters flew over the ceremony in two F/A-18 Hornets, while an F4F Corsair, F-6F Wildcat, and SBD Dauntless soared overhead in 1940s warplanes from the Lone Star Flight Museum in Galveston.

Barber is with Submarine Force, U.S. Atlantic Fleet Public Affairs.

ELECTRONIC SYSTEMS CENTER PUBLIC AFFAIRS (SEPT. 22, 2006)

AF RADIO BUY SETS EVOLUTIONARY PATH

Chuck Paone

HANSCOM AFB, Mass.—The Air Force Joint Tactical Radio System Program Office, part of the Electronic Systems Center's Airborne Network Management Division, recently awarded the first Department of Defense contract for a JTRS radio.

The $7.6 million JTRS Handheld radio contract awarded through competitive bid to Thales Communications Corp., is considered an "interim solution," said Capt. Michael Broadaway, Air Force JTRS program manager. The future iteration of this radio will comply with the full JTRS Operational Requirements Document.

This award, however, is putting "the first iteration" of a JTRS radio in the hands of U.S. warfighters now and is meeting their near-term needs, he said.

"This purchase is the first JTRS radio buy within the Department of Defense," said Col. Anita Latin, commander of the 653d Electronic Systems Group, which oversees the Airborne Network Management Division. "This is a historical moment for the Air Force, because it provides an immediate capability increase while moving us along an evolutionary path toward the ultimate JTRS solution."

KHARMA, Iraq—Marine Sgt. Brandon Shofne radios back to his headquarters descriptions of the ordnance found during a weapon cache sweep in Kharma, Iraq, last December. Sergeant Shofne, who is attached to the USMC's 2nd Combat Engineers Battalion, is using a legacy radio. The JTRS radios recently purchased by the ESC team will provide upgraded capability.

DoD photograph by Lance Cpl. Matthew Hutchison, USMC

The JTRS radios envisioned by DoD, expected to begin coming on line in the 2011 or 2012 timeframe, are based on software development that enables one radio to handle various waveforms, said Charlie Dancy of the MITRE Corp., the team's engineering lead. This will allow an unprecedented cross-flow of information with a lot less hardware.

For the soldier—or tactical air control party member—on the ground, as well as for platform managers dealing with space constraints, there are obvious benefits to no longer needing multiple radios. The greatest benefit, though, will be the increase in warfighting efficiency, where easier and better inter-Service communication can make all the difference.

Current radio systems lack interoperability across the spectrum and have insufficient bandwidth to meet all current and anticipated future communications needs.

This initial procurement provides immediate relief to the warfighters in Afghanistan and Iraq who are currently borrowing radios from the Army to communicate with U.S. soldiers.

The ultimate JTRS solution is a family of all-Service radios and a new wideband networked waveform that can provide mobile, networked connectivity.

Another key, according to Dancy, is that the new, 'software-defined' radios will be "backward-compatible"; that is, compatible with the current waveforms in use today.

"This award is just the tip of the iceberg of a $2.9 billion Air Force JTRS procurement effort," Broadaway said.

The radios will be used by Air Force Special Operations Command operators, security forces and civil engineers. They will also be used within Air Operations Centers, Distributed Common Ground System facilities, and other command and control centers.

The ESC team worked with the Air Force Command, Control, Intelligence, Surveillance and Reconnaissance Center at Langley AFB, Va., as well as the major handheld radio users expected to benefit from this purchase, to coordinate and help establish the requirements, said Steve Briggs, a senior program support specialist for AF JTRS. The C2ISRC is responsible for establishing Air Force command and control requirements, and by working jointly with that center, the ESC team was able to put together a Request for Proposals that clearly stated customer needs.

Due to multiple bidders and the competitive bidding process, the team was able to save an estimated $2.7 million versus original projections.

These savings allowed the team to call for bids to purchase an additional 400 radios. In all, the team will purchase 1,675 radios this year, and an additional 10,000 next year.

"This is a great step forward," said Broadaway. "This streamlined, competitive procurement—wherein we awarded the contract within 30 days of receiving vendor quotes—puts capability in the users' hands quickly and establishes a path for future JTRS radio purchases."

Paone is with Electronic Systems Center Public Affairs, Hanscom AFB, Mass.

U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND

FIBER OPTICS OFFERS NEW CAPABILITY AT REAGAN TEST SITE

Paula Y. Taylor

A new undersea fiber optic cable from Kwajalein to Guam and with a direct link to the United States will enable U.S. Army at Kwajalein Atoll, Reagan Test Site, or USAKA/RTS, to distribute mission operations and personnel positions back to Huntsville, Ala. This initiative is scheduled to be completed March 2008.

Located in the Republic of Marshall Islands, USAKA/RTSs principal mission areas are primarily ballistic missile defense testing and space surveillance operations. The U.S. Army Space and Missile Defense Command/ARSTRAT is the Army's proponent for space and missile defense and is responsible for the operation of Reagan Test Site and other facilities located at Kwajalein Atoll.

Equipment installed at the test site includes various tracking radars, stationary and mobile telemetry, optical recording equipment, and a secure intra-atoll fiber optic data network via submarine fiber optic cables. The Reagan Test Site also serves as a space launch complex, as a tracking station for manned space flight and NASA research projects.

Optical fiber systems have many advantages over satellite-based communication systems, the most noteworthy of which is wide bandwidth and low data latency. The key advantages of long-haul undersea fiber over geosynchronous satellite are the significantly higher bandwidth (more data) and low data latency (shorter path/near instantaneous). More bandwidth will allow for massive amounts of mission data required for running missions in the new operations center in Huntsville. The low data latency advantage is due to the shorter terrestrial fiber path versus the long satellite path to a satellite 93,000 miles in space. Near instantaneous data are essential for command and control of flight test missions as well as control of remote range sensors and the space surveillance mission. In addition, fiber is not affected by atmospherics and is more secure. Emerging technologies promise even greater distances in the future.

The success of the relocation initiative to Huntsville involves using the concept of distributed operations, a remote capability that enables authorized, geographically dispersed users to gain secure access to a common set

of data files. USAKA/RTS is implementing distributed operations in three phases:

Phase 1
Kwajalein Modernization and Remoting

The goal of this successfully completed phase was to provide the enabling architecture via fiber for future distributing operations to the mainland. During this phase, a fiber-optic network was installed locally throughout the command's key range operations, which included establishing remote operations capability from Roi-Namur to Kwajalein.

Phase 2
Demonstrate Distributed Operations in Huntsville

During this current phase the Army will attain fiber optic connectivity from Kwajalein and to the Continental United States. Additionally, the Kwajalein Space Operations Control Center was established at the U.S. Army Space and Missile Command/ARSTRAT in Huntsville. Initial Operation Capability is scheduled for 2007.

Phase 3
Mission-Capable Distributed Operations—FY08 and Beyond

The final phase is the realization of space and missile testing operations from the United States, where all the appropriate functional and technical staff will be relocated. Additional benefits for the customer will be the ability to access critical mission data from the continental United States and the reduction of customer travel costs to Kwajalein.

Total cost of this initiative is expected to be $55 million, with $6.3 million per year being allotted for lease of the required bandwidth annually for 15 years. USAKA/RTS is committed to moving the majority of the operational mission to Huntsville, where it will be a valued addition to the hub of the Space and Missile Defense Command System Integration, Test and Evaluation Directorate.

Taylor is a senior program analyst with the U.S. Army Space & Missile Defense Command/ARSTRAT, Redstone Arsenal, Huntsville, Ala.

U.S. TRANSPORTATION COMMAND NEWS SERVICE (OCT. 6, 2006)
TRANSCOM NAMED DOD'S LEAD PROPONENT FOR RFID AND RELATED AIT

Maj. G. P. Mirabella, USAF

SCOTT AIR FORCE BASE, Ill.—In a Sept. 26, 2006, memorandum from the under secretary of defense for acquisition, technology and logistics, U.S. Transportation Command was designated as the lead functional proponent for Radio Frequency Identification (RFID) and related Automated Identification Technology (AIT) implementation for the Department of Defense supply chain.

As the DPO, USTRANSCOM is responsible for the overall effectiveness, efficiency, and alignment of DoD-wide distribution activities, including force projection, sustainment, and redeployment and retrograde operations.

AIT is a suite of technologies that enables capture of source data, thereby enhancing the ability to identify, track, document, and control material, maintenance processes, deploying and redeploying forces, equipment, personnel, and sustainment cargo. This suite includes Linear Bar Codes, 2-dimensional Symbols, Optical Memory Cards, Satellite-Tracking Systems, Contact Memory Buttons, and RFID tags.

RFID tags (or transponders), which have been around since the 1980s, are small devices that are affixed to objects such as cargo pallets, containers, or individual items and which store information. Readers (or interrogators), both stationary and hand-held, read and write information from and to an embedded chip in the tags. The tags are read remotely when they detect a radio frequency signal from a reader. These readers then display tag information or send it over a network to back-end systems.

Active RFID tags, which contain an internal battery with up to eight years of life, can be read over long ranges (100 feet or more). Active RFID tags contain transportation information and support in-transit visibility.

Passive RFID tags consist of a computer chip attached to small antennae. They contain no battery; the tag "reflects" an ID number back to a reader. They have a shorter range of one to three feet and can be used to support business process enhancements, such as improved materiel receipt.

"We are implementing passive RFID at our aerial ports and are continuing to look at how passive RFID can benefit our business processes," said Air Force Lt. Col. Amy Pappas, chief of the Initiatives Branch of USTRANSCOM's Strategy, Plans, Policy, and Programs Directorate, the office that is the command's lead element for AIT imple-

mentation. "We are also exploring how satellite technology can be used to track shipments."

Private industry uses RFID tags—active and especially passive—as well as other AIT extensively to improve the asset visibility and in-transit visibility of their supply chains. Based on the success of these technologies in the commercial sector, the Defense Department, led by USTRANSCOM, has been implementing RFID and other AIT to improve the efficiency and effectiveness of its distribution system.

USTRANSCOM is using AIT to achieve better visibility of its shipments. Pappas explained that there is an extensive active RFID infrastructure in place at strategic ports worldwide. This allows USTRANSCOM to know when shipments arrive and depart these ports, and this information is fed to USTRANSCOM's Global Transportation Network, an automated command and control information system that provides an integrated system of in-transit visibility information and command and control capabilities.

Mirabella is with U.S. Transportation Command Public Affairs at Scott AFB, Ill.

QUANTIFYING RISK ACROSS THE DEPARTMENT OF DEFENSE

Capt. Gregory Tyler, USAF ▪ Barbra Masquelier

Every mission in the DoD involves some kind of risk—from developing aircraft maintenance schedules to managing research and development programs in the laboratory. In their efforts to execute sound risk management, Department of Defense workers frequently confront daunting amounts of data that contribute to a decision, but mean nothing individually. Many times these data represent inexplicit averages, approximations, and expert opinion. The challenge is fusing all this risk management information and displaying it for effective and efficient decision making.

The preemptive managing of these risks just became easier. Scientists and engineers at the Air Force Research Laboratory have developed *RiskAoA*, an Excel-based tool for the quantitative comparison/analysis of alternatives, which transforms daunting amounts of data into concise information. RiskAoA, which combines textual, quantitative, and qualitative inputs to generate an ordered comparison of the risks for any alternatives, is now available to provide decision quality information for anyone.

RiskAoA

Current risk tools fill an important gap in risk analysis; they display the risk of a program under current conditions. RiskAoA fulfills another niche—that of comparing and contrasting alternatives for planning and instant review. This is an immense aid to future planning and the comparison of a portfolio of current programs. Risk evaluations from current tools map directly into RiskAoA for other quantitative comparisons.

Not only is RiskAoA a program manager's tool, it also is easily adapted to quantify any alternative, comparison, or set of choices. Any type of risk comparison—ranging from contract proposals to stock portfolios, or even different routes to work—can be processed by RiskAoA. Simply stated: *it analyzes choices*.

RiskAoA uses statistics to generate its outputs. Along with a quantitative comparison of the risks of alternatives, it also generates a forecast—an estimation of how accurate the evaluation will be. This is similar in concept to a weather forecast: given the last 100 days of 80 percent humidity and the sun shining, it has rained 40 percent of the time. The RiskAoA, concept is more simple: the more numerous risk categories available, the more likely the result will be accurate. In other words, RiskAoA can be likened to a shotgun approach—the more shots fired, the more likely a hit will find its mark.

The "shotgun" approach is a risk mitigating step in itself. Just as an individual shotgun pellet is not important enough to disrupt a single shot, spot inaccuracies in a robust data set of partial information are not important enough to skew the resultant analysis of alternatives.

RiskAoA has four primary uses: 1) long-term project analysis (analysis of alternatives, risk assessment teams, etc.) or situations having/requiring many details, but large uncertainties; 2) demonstrating risk for the phases of a project (6.1, 6.2, 6.3); 3) to demonstrate a project's risk progression (history); and 4) to contrast multiple programs' risk and to compare components of a project's risk (e.g., plane: avionics, weapons, engines, landing gear, etc.).

The tool is simple to use relying on only four key inputs from the user. As depicted in the following chart, the dependent risk column allows the user to parameterize parallel and series risks. For example, if 10 people need to receive a phone call in order for the mission to be successful, then enter the number 10 into this column. Alternatively, if of those 10 people only one needs to re-

Technologies for Net Centric T&E

Number of Distinct Interacting Components (RADAR and Plane w/RADAR etc.=2, for example)

Risk Categories	Alternative1 Description	Mitigation Actions	Dependent Risk	Risk/Impact 87% Catastrophic	87% (H,M,L,N,#) Critical	87% Moderate	87% Negligible	Universal Risks (N/A,H,M,L,#)
Definition of Net Centric (NC)			1	L	L	M	M	N/A
Identify NC shortfalls			1	H	H	H	H	H
Sufficient Solution			1	H	H	L	L	L
Operational T&E:			1	H	H	L	L	N/A
T&E methods compatible with existing systems			1	H	H	H	H	N/A
Uses minimum system resources	High capacity computing ameliorates risk		1	?	14%	?	N	N/A
Coherence of Information			1	L	L	N	N	N/A
Infrastructure Taxing			1	3%	M	9%	N	N/A
Live fire testing			1	H	H	H	H	N/A

ceive the call, the number is 1/10. This can reflect the number of systems impacted, changes on configuration control, or other "domino" effects. The cornerstone of the tool is the qualitative assessments of risk; High, Medium, Low, or Negligible inputs are entered into the Catastrophic, Critical, Moderate, and Negligible columns. Note that quantitative assessments can also be entered.

The final input—Universal Risk—is the ability of the risk to impact the entire program. Pieces of a program on a critical path are the best example of this phenomenon. Universal Risk is also a useful tool for comparison analysis. If a project's funding risk changes, it can be compared and contrasted with other programs' sensitivity to change. The fourth input is the number of distinct systems impacted by the analysis.

The results are generated and display in raw and normalized numbers. They have three easy-to-understand display types. They represent 1) raw or "floating" results, 2) results divided by the worst result so that the worst is displayed as 100 percent, and 3), an advanced display for instances where a known risk result—for example, a result from historical, parametric, or engineering data—can be compared to the generated display. If known risk data are available, what is generated and displayed represents real values of probability.

RiskAoA, known previously as RiskHammer, has been referenced by the Defense Technical Information Center (DTIC), ESC/AE (and MITRE-Risk Specialists), and by the AFRL Systems Engineering Initiative.

Tyler and Masquelier are with the Air Force Research Laboratory's Plans and Programs office. For more information or questions about RiskAoA, contact AFRL/XPC at (937) 656-9048 or place a request at AFRL.XPC@WPAFB.AF.mil. Please include your contact information and a brief description of the program or application. The distribution of the technology is encouraged to all government employees; however, most analysis will be distribution-limited.

Spotlight on DAU Learning Resources

NEW DAU LEARNING MODULES

The following new modules are available on the DAU Continuous Learning Center at <http://clc.dau.mil> through both "browse" and "register" options:

- Anti-Tamper (CLE 022)
- Enterprise Architecture (CLE 020)
- Evolutionary Acquisition (CLM 032)
- Fundamentals of Technology and Transport Controls (CLM 036)
- Outcome-based Performance Measures (CLE 016)
- Technology Readiness Assessments (CLE 021)
- Information Assurance (CLM 010)

Coming Soon…

The following modules are in development and will go live in October–December 2006:

- Modular Open System Architecture
- Quality Assurance Auditing
- Software Protection
- Structuring Contracts for Emerging DoD Requirements
- Technical Planning

DAU AND NDIA TO SPONSOR DEFENSE SYSTEMS ACQUISITION MANAGEMENT COURSE OFFERINGS FOR INDUSTRY MANAGERS

DAU and the National Defense Industrial Association will sponsor offerings of the Defense Systems Acquisition Management (DSAM) course for interested industry managers at the following location during fiscal 2006:

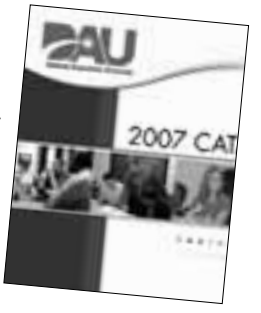
- Feb. 5-9, 2007, Sheraton Tampa Riverwalk, Tampa, Fla.
- May 7-11, 2007, Gaylord Opryland Resort & Convention Center, Nashville, Tenn.
- July 16-20, 2007, Red Lion Hotel on Fifth Avenue, Seattle, Wash.
- Sept. 10-14, 2007, Radisson Plaza Hotel, Minneapolis, Minn.

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

- Defense acquisition policy for weapons and information technology systems, including discussion of the DoD 5000 series (directive and instruction) and the CJCS 3170 series (instruction and manual)
- Defense transformation initiatives related to systems acquisition
- Defense acquisition procedures and processes
- The planning, programming, budgeting, and execution process and the congressional budget process
- The relationship between the determination of military capability needs, resource allocation, science and technology activities, and acquisition programs.

For further information see "Courses Offered" under "Meetings and Events" at <http://www.ndia.org>. Industry students contact Phyllis Edmonson at (703) 247-2577 or e-mail pedmonson@ndia.org. A limited number of experienced government students may be selected to attend each offering. Government students must first contact Bruce Moler at (703) 805-5257, or e-mail bruce.moler@dau.mil prior to registering with NDIA.

DEFENSE ACQUISITION UNIVERSITY 2007 CATALOG



The Defense Acquisition University 2007 Catalog has been posted online at <http://www.dau.mil/catalog/default.aspx>. You may request a hard copy from the DAU Student Services Office at studentservices@dau.mil. Information in the hard copy catalog is current as of Oct. 1, 2006. However, the online catalog is updated periodically throughout the training year, and new CDs are produced with each update. (DAU is printing fewer hard copy catalogs because the information is readily available and current online. In general, we will limit the number of hard copies to one per requestor.) Currency of information contained in hard copies and CDs should always be confirmed on the catalog Web site shown above.

DAU CONTINUOUS LEARNING MODULES

The Defense Acquisition University now hosts over 160 continuous learning modules on its Continuous Learning Center Web site at <http://clc.dau.mil/>. Browse the site today and begin fulfilling the DoD AT&L requirement for obtaining 80 continuous learning points every two years.

DAU SIGNS MEMORANDUM OF AGREEMENT WITH STANDARD PROCUREMENT SYSTEM JOINT PROGRAM MANAGEMENT OFFICE

On Sept. 28, 2006, the Defense Acquisition University and the Standard Procurement System (SPS) Joint Program Management Office (JPMO) signed a Memorandum of Agreement that formalizes joint developments to better support the learning needs of the acquisition workforce. One of the more significant developments is the design and deployment of the SPS Process Performance and Learning Tool. The PPLT concept integrates formal learning assets and other resources into comprehensive job performance tools that not only support completing a specific task or process, but also provide learning as a secondary outcome.

Other developments will span across the AT&L Performance Learning Model to leverage existing resources and continue to provide the workforce community with the ability to "learn at the point of need." The partnership will also foster and promote mutual learning and job support development opportunities.

Pictured: Dr. James McMichael (right), vice president, Defense Acquisition University, and Army Col. Quentin L. Peach, head of the Army's Standard Procurement System, formalize their educational partnership with a Memorandum of Agreement signing on Sept. 28, 2006.

Photograph by Sgt. Ian Mosher, USA

DAU SOUTH REGION AND U.S. ARMY LOGISTICS SUPPORT ACTIVITY SIGN MEMORANDUM OF AGREEMENT

The Defense Acquisition University South Region signed a Memorandum of Agreement with the U.S. Army Logistics Support Activity (LOGSA) on Sept. 28, 2006, for the development of a Systems Engineering Plan Process Performance and Learning Tool, curriculum development support, and related efforts to support the acquisition workforce community. DAU will provide subject matter experts, and LOGSA will provide the technical expertise. The synergy between the two organizations will result in the design and delivery of automated job aids to increase job performance within the acquisition community. Collectively, DAU and LOGSA will evaluate the feasibility of using the LOGSA development tool for the creation of additional automated acquisition plans/documents (e.g., acquisition plan). Goals of the partnership are to enhance and broaden available products, learning assets, and performance support currently provided by the two organizations.

DAU MIDWEST REGION AND DCMA DETROIT SIGN LEARNING ORGANIZATION AGREEMENT

Travis Stewart, dean, DAU Midwest Region in Kettering, Ohio, and Army Col. Susan K. Grubb, commander, Defense Contract Management Agency (DCMA) Detroit, Mich., signed a Learning Organization Agreement on Aug. 9, 2006. Under the terms of the agreement, the Midwest Region and the DCMA-Detroit will partner to provide professional education and training opportunities across the acquisition, logistics, and technical disciplines to the DCMA Detroit offices. This is

the eleventh such agreement signed this year for the Midwest Region.

DCMA Detroit, Combat Vehicles Contract Management Office, is a part of the Defense Contract Management Agency, a Department of Defense component that works directly with defense suppliers to help ensure that DoD, federal, and allied government supplies and services are delivered on time, at projected cost, and meet all performance requirements.

WHAT'S NEW IN DOD ACQUISITION?
EMERGENCY RESPONSE AND RECOVERY CONTRACTING COMMUNITY OF PRACTICE

The AT&L Knowledge Sharing System (AKSS) Web site now hosts an Emergency Response and Recovery Contracting Community of Practice. Its purpose is to establish a cadre of highly skilled procurement professionals who are available to respond to national emergencies and disasters; provide a collaborative resource tool to support the cadre; and foster knowledge sharing across the federal government.

The following enabling strategies will be actively pursued and further developed for this new emergency response knowledge repository:

- Compile a list of volunteers that may be available for deployment.
- Identify, leverage, and develop a specialized suite of emergency, response and recovery training courses.
- Provide a federal-wide collaborative resource tool to promote knowledge sharing across the government. This repository offers learning and job support assets to include policy and procedure information, training resources, interagency contracts, human resources information, and e-tools and links.
- Embrace a culture of performance excellence and continuous partnership.
- Senior leadership and sustainment support.

Browse the Emergency Response Community of Practice at <https://acc.dau.mil/emergencyresponse>.

DAU COLLABORATES WITH LEAN ACADEMY AT DOVER AFB

Professor Marty Sherman from the Defense Acquisition University West Region and Professor Steve Brown of DAU's Capital and Northeast Region recently partnered with instructors from the University of Southern California, University of Alabama Huntsville, and Massachusetts Institute of Technology, to deliver a Lean Academy to the U.S. Air Force 436th Airlift Wing at Dover Air Force Base, Del.

This Lean Academy represented a significant milestone for the university, as it was the first Lean Academy taught at an operational military organization since DAU joined the Lean Aerospace Initiative (LAI) Education Network (EdNet). LAI is based at MIT and is a consortium of government, industry, and academic organizations committed to the Lean transformation.

Twenty-eight servicemembers attended the class, ranging in rank from colonel to airman and representing every facet of maintenance. After brief introductory lessons, the students toured ILC's Dover facilities and witnessed firsthand the successes realized from the implementation of Lean. This was followed by simulations and exercises geared toward giving the students hands-on training with the use of various Lean tools. In the capstone exercise, the students developed a top-level Value Stream Map and then out-briefed their product to the Wing Maintenance Officer.

The Lean training allows for real-world problem-solving analysis and application. The tremendous success of this effort has led to the scheduling of additional Lean Academy offerings at Wright-Patterson AFB, Ohio, and Eglin AFB, Fla.

DAU AND USMC SIGN MEMORANDUM OF AGREEMENT FOR CONTINGENCY CONTRACT TRAINING

On August 1, 2006, the Defense Acquisition University and the U.S. Marine Corps established a contingency contract training program, the culmination of an initiative started by Shay Assad, Director, Defense Procurement and Acquisition Policy, OUSD(AT&L), when he was USMC's assistant deputy commandant, Installations and Logistics (Contracts). Tim Shannon, dean of DAU's Capital and Northeast Region, and Mike Mutty, acting assistant deputy commandant, Installations and Logistics (Contracts), signed the 5-year Memorandum of Agreement, marking a shift to mission-focused training to support Marines in worldwide contingencies such as Afghanistan and Iraq.

Under the agreement, Marines will complete a 5-month program of instruction focused on contracting on the battlefield. This practitioner-based training will develop the practical skills necessary for contingency contracting officers to support deployed units.

Spotlight on DAU Learning Resources

DAU INTRODUCES STAKEHOLDER MANAGEMENT COURSE

Will Broadus ▪ *Duane Mallicoat*

With the complexity of today's acquisition programs, the number of stakeholders who can influence the programs' outcomes continues to grow and diversify. Many of these stakeholders reside outside the program manager's and the milestone decision authority's direct control and sphere of influence. How do stakeholders such as Congress, the media, the warfighter, industry, joint-coalition, and other executive agencies influence your program's outcome? Their view of the value of your program will drive their alignment as a proponent or detractor. The nature of your relationships with these key stakeholders can greatly extend your ability to effectively achieve your program's outcomes.

PMs face many questions regarding management of their key stakeholders: Does the PM's span of stakeholders change in quantity and impact depending on the stage of the acquisition process? If so, how does the PM effectively manage the change? At what level is the contact managed: just the PM level or the leadership team level? Is there a difference in merely keeping stakeholders informed versus managing their interests? Are their times when the stakeholders' interests and the PM's are different? Why is this?

The process of stakeholder management is a continually evolving and changing target that requires constant attention at various levels. Today's acquisition leadership teams must ask themselves how they are doing in the area of stakeholder management.

To support teams in stakeholder management, DAU will offer a new 3½-day course in 2007 at each of the DAU regional campuses: ACQ 452: Forging Stakeholder Relationships. The course will expose the DoD and industry acquisition members to methods and skills for the identification, assessment, and building of stakeholder relationships required for success in the acquisition environment. The course will walk the student through the various phases of stakeholder management, including the application of a stakeholder model to their current or future program assignments. It will discuss how to meet stakeholder expectations and communicate effectively, relative to constraints and DoD guidance. And it will guide the student through the development of a stakeholder action plan to promote effective relationships.

When looking at emerging team situations, the driver in determining whether the situation becomes a roadblock or evolves into an opportunity is not solely the program's technical merits or its financial executability, but a combination of both, plus the ability of the team to engage and influence key stakeholders. True stakeholder influence can be achieved only by understanding the program needs and those of each stakeholder; providing alternatives that can support both sides' needs; and cultivating the person-to-person relationship necessary to make the solution a reality. ACQ 452 is the tool to help PMs achieve these outcomes.

Broadus and Mallicoat are professors at the DAU Mid-Atlantic Region, California, Md.

DAU RANKS NO. 1 IN "BEST IN LEADERSHIP DEVELOPMENT 2006"

The Defense Acquisition University has again been ranked No. 1 in Leadership Development by Executive Excellence Publishing, a leading source of knowledge on personal and organizational leadership development. For the past 22 years, *Leadership Excellence* magazine has rated the best leadership development programs in seven categories. In 2006, some 600 organizations were surveyed, and the best leadership development programs were judged by the following criteria:

- Vision
- Involvement
- Measurement
- Curriculum(a)
- Delivery
- Reach
- Value
- Impact on the organization.

DAU was recognized for its world-class learning environment and its outstanding executive development and program management programs.

Because of its first place ranking, DAU was featured in the October 2006 issue of *Leadership Excellence* magazine. The university's success in this rigorous competition with the nation's foremost leadership development organizations and institutes is eloquent testimony to the dedication, technical excellence, and proven results of its faculty and staff

Career Development

AIR FORCE ACQUISITION OFFICERS CHALLENGED TO SEEK COMMAND OPPORTUNITY

Air Force Lt. Gen.Donald J. Hoffman, military deputy, Office of the Assistant Secretary of the Air Force for Acquisition, encourages field grade officers to accept the challenge and reap the rewards of being a commander. Command opportunities in Air Force acquisition career fields have increased measurably, he noted in a July 13, 2006, memorandum. Read Hoffman's memorandum in its entirety at <https://www.safaq.hq.af.mil/mil/career/documents/Importance%20of%20Command.pdf>.

COMMENTARY (AUG. 25, 2006)

ENLISTED AND OFFICER FORCE SHAPING PART OF AIR FORCE LANDSCAPE

Lt. Col. Scott M. Katz, USAF

WRIGHT-PATTERSON AIR FORCE BASE, Ohio—Air Force fiscal 2007 force-shaping programs for active-duty members were recently announced. If you are eligible for or supervise someone subject to force shaping, you really need to know about these programs.

Affected airmen, supervisors, and commanders need to be aware of all aspects of force shaping and prepared to participate in the process. Why? Force shaping will involve difficult decisions for airmen and leaders at all levels, but it's critical we mentor our people as we continue to balance the right set of skills and experiences throughout our Air Force, reduce end strength, and recapitalize.

If you didn't have the opportunity to attend one of the mass briefings that explained the fiscal 2007 programs, here are some highlights.

First, we'll have a more restrictive career job reservation program for first-term airmen this year. It's going to be harder for our first-term airmen in overage career fields to get that job reservation to continue in their present Air Force specialty code. Some airmen not offered a career job reservation may be able to retrain, some may be able to get a special duty assignment, and others will be separated at the end of their enlistment. Additionally, more than 1,200 enlisted members will be retrained into critically manned career fields. Overall, the Air Force is planning to reduce the enlisted force by 31,500 members by fiscal 2011.

The officer corps will draw down more than 9,000 members by fiscal 2011 as well. The Air Force Personnel Center will conduct a force shaping board in March 2007 for lieutenants in the 2004 year group in overage career fields. Some lieutenants in the 2003 year group in overage career fields who were not considered by a force shaping board last year will be considered this year.

The AFPC Force Shaping Web site and matrix are the best sources of information. The matrix on the Web site gives officers an idea of where their career field stands. The additional information due out in the fall will be posted on the AFPC Web site as well. Visit <http://ask.afpc.randolph.af.mil>. The Voluntary Separation Pay program is offering a cash incentive to separate between Oct. 1 and Sept. 29, 2007, for some officers who have six to 12 years' total service. The VSP program is limited to officers in certain overage career fields. Under this program, an eligible captain with eight years' total military service would receive a little more than $90,000 to separate. The separation incentive is a lump sum payment that is subject to income tax withholding. As with the force shaping board, the AFPC Web site is the prime resource for information on VSP.

The Air Force is also planning to conduct a Selective Early Retirement Board this year for line, chaplain, and judge advocate officers in the grades of lieutenant colonel and colonel. The board will consider lieutenant colonels who have been passed over twice for promotion and colonels with four years' time in grade.

A detailed briefing on these programs and instructions for submitting a VSP application are available at <https://88mss.wpafb.af.mil>. Air Force Personnel Center's Force Shaping Web site at <http://ask.afpc.randolph.af.mil> is a "must visit" for additional information on force shaping.

Katz is the commander, 88th Mission Support Squadron at Wright-Patterson AFB, Ohio.

AIR FORCE PRINT NEWS (SEPT. 6, 2006)

OFFICER PROMOTION BOARD CHANGES TAKE EFFECT JAN. 1

Staff Sgt. C. Todd Lopez, USAF

WASHINGTON—The secretary of the Air Force has approved changes to the format of thes

election brief presented to officer promotion boards to begin Jan. 1, 2007.

Air Force officials will implement three changes to officer selection briefs, or OSBs; two changes deal with presentation of data related to developmental education, while a third change deals with deployment history.

The OSB is a single sheet of paper that summarizes an officer's career. It is an important document in an officer selection record, or OSR. The OSR is presented to a selection board when an officer is being reviewed for promotion.

The OSR contains, in addition to the OSB, such items as performance reports, training reports, decorations, and a promotion recommendation form. The OSB is intended to be an overview of what is inside the OSR, said Col. Philip Odom, the chief of Air Force Military Force Shaping Policy.

"It is essentially a summary of an officer's career—some would call it a snapshot—in a format that is quickly reviewed by a board member," Odom said. "A board member can look at the OSB and get an idea of where an officer's career is by looking at their job titles and duty descriptions, and whether or not they have completed developmental education."

Beginning in January, OSBs will no longer list the name of a school an officer attended as part of their developmental education. Instead, under the education heading, the brief will indicate only the level of education attained along with its completion date.

In the civilian world, colleges and universities often make a determination about the caliber of applicants before accepting them as students. Applicants who are accepted to the most prestigious schools, and who later graduate, are often looked upon more favorably than those who graduated from lesser-known schools.

In the Air Force, however, officers selected for developmental education have little input into the school they attend. Often their schools and the coursework they will participate in are chosen for them.

By eliminating school names from the developmental education portion of the OSB, the Air Force hopes to change a culture that in the past has put too much emphasis on the school attended rather than the fact the officer completed the appropriate level of professional military education.

"This gets into the issue of getting away from the pedigree of the school attended," Odom said. "Historical experiences are that officers that go in residence to a better-known school—such as the National Defense University or the Naval Postgraduate School—that those schools represent a quality cut of the officer. This is an attempt to move away from that mindset. If an officer is selected for senior developmental education, wherever they go, that is significant. You have to change the established mindset of the force."

A second change to the OSB, also related to developmental education, is the addition of the "declined with prejudice" statement. That statement will display on an OSB if an officer has declined to attend developmental education in their last year of eligibility (if they were a select).

"When you are identified and designated to go do developmental education, the Air Force is saying we need you to go do that education, because in the future we need the skill sets you are going to acquire," Odom said. "By declining to attend, you are telling the Air Force you don't want to participate anymore, that you are not really a team player any longer. It is important for a selection board to know an individual has elected not to play."

In April, the Air Force began asking officers to sign a letter when they declined an opportunity to attend developmental education. Since that time, the letter of declination has been included in an officer's OSR. But the OSB has not reflected the declination. Instead, the OSB continued to say the officer had been selected for developmental education. Changes to the OSB will rectify the disparity.

Odom said officers who cannot attend developmental education due to operational reasons will not see "declined with prejudice" on their OSBs. Rather, their OSB will identify them as being "operationally deferred."

The final change to the OSB involves an officer's deployment history. Under the deployment history heading, the OSB will now reflect the location of an officer's contingency and exercise deployments. In the past, only the date and level of command during a CED deployment were displayed.

The OSB will now indicate if the deployment was overseas or in the United States. Location will be indicated with either an "OS" or a "US" designator to protect against revealing the location of classified deployment locations.

Changes to the OSB will not necessarily affect promotion numbers, because selection board members will continue to closely review records as they have in the past to make promotion decisions.

Lopez is on the staff of Air Force Print News.

SPECIAL RELEASE FROM THE U.S. DEPARTMENT OF DEFENSE (SEPT. 12, 2006)

DOD ANNOUNCES COMPREHENSIVE REVIEW OF MILITARY AWARDS

WASHINGTON—The Department of Defense has begun a comprehensive review of military awards and decorations in order to ensure policies are consistent with the evolving nature of warfare.

This comprehensive review will lead to an administrative revision of the Department of Defense Instruction 1348.33-M, Manual of Military Decorations and Awards.

A working group consisting of representatives from each Service, the Joint Staff, and the Institute of Heraldry will form the core of the comprehensive review effort.

This comprehensive review of military awards is expected to continue over the next six to eight months and will involve but not be limited to the following:

- Honor and valor awards with particular focus on clarity of criteria and processes
- The "V" device and the Purple Heart medals in eliminating disparate qualification criteria among the military services
- Expeditionary medals in regard to how the theater of operations is defined
- Iraqi and Afghanistan campaign medals with regard to subsequent awards of these campaign medals, with a goal of appropriately recognizing service over multiple tours in those theatres of operations.

"The evolving nature of warfare demands that we review policies; for example, in the case of expeditionary medals, we must review how we define the operating 'box'—whether it is the theater of direct action, or whether it might extend far beyond," said David Chu, under secretary of defense for personnel and readiness. "For example, we must consider whether air support originating at great distances or different continents indeed represents expeditionary service for purposes of those awards.

"When it comes to valor awards, we must clarify criteria, including a review of boundaries that increasingly extend far beyond a particular combat zone, yet involve direct threats to American lives" said Chu.

AIR FORCE PERSONNEL CENTER NEWS SERVICE (SEPT. 14, 2006)

SELECTIVE EARLY RETIREMENT BOARD TO CONVENE JAN. 8, 2007

RANDOLPH AIR FORCE BASE, Texas—In an effort to shape the force to support core and emerging missions, Air Force officials will convene a Selective Early Retirement Board Jan. 8 to balance the excess of officers in the colonel and lieutenant colonel ranks.

The SERB will evaluate the line of Air Force and chaplain colonels and lieutenant colonels who meet the following criteria: colonels with four years' time in grade and lieutenant colonels who have been non-selected for promotion to colonel at least twice will be considered by the board for early retirement. Judge advocates will not meet the board.

The 2007A SERB is scheduled to convene at the Air Force Personnel Center. Officers selected by the SERB for early retirement must apply for a voluntary retirement date of no later than Sept. 1, 2007.

Senior raters will write retention recommendation forms, or RRFs, on their eligible officers to provide retain or retire recommendations. The officer's senior rater is determined based on the unit the officer is assigned to by Sept. 15. SERB-eligible officers should receive a copy of the RRF no later than 30 days before the board. They are responsible to ensure the accuracy of the RRF, performance reports, decorations, and the data on their preselection brief prior to the board date.

To preclude SERB consideration, SERB-eligible officers must submit a retirement application and have it approved by Jan. 1. Officers should submit their applications by Dec. 15 to ensure approval by the deadline. The requested retirement date must be on or before Sept. 1, 2007.

Officers with an approved voluntary retirement, those already selected for promotion or scheduled for manda-

tory retirement in fiscal 2007 or 2008 will not meet the board.

By law, the Air Force may select up to 30 percent of the eligible officers in each grade and competitive category for early retirement. The SERB will closely mirror the central selection board process for promotions and will consider the member's decorations, RRF, training and performance reports, and officer selection brief.

For more information about the SERB and volunteer separation opportunities, visit the AFPC Web site at <http://www.afpc.randolph.af.mil/retsep/forceshaping/CURRENT/SERB07.htm> or call the Air Force Contact Center at 800-616-3775.

AIR FORCE MATERIEL COMMAND (SEPT. 27, 2006)

AFMC VICE COMMANDER TESTIFIES ON NEW PERSONNEL SYSTEM

Kathleen A.K. Lopez

WRIGHT-PATTERSON AIR FORCE BASE, Ohio—Lt. Gen. Terry Gabreski, Air Force Materiel Command vice commander, spoke before the Senate Committee on Homeland Security and Governmental Affairs, Sept. 20, addressing the recent implementation of the National Security Personnel System Spiral 1.1, at Tinker Air Force Base, Okla.

It was the third hearing examining the design and implementation of NSPS, a revised pay-for-performance system, which is the most radical change in general schedule pay for government employees since its inception in 1949. Specifically, NSPS provides the Defense Department a more flexible and responsive civilian personnel system for its non-bargaining unit employees. The system rewards high-performing employees, links performance objectives to organizational goals, and increases individual accountability.

Prior to her current assignment, Gabreski was commander of the Oklahoma City Air Logistics Center at Tinker AFB, which was the first Air Force installation to implement NSPS. Gabreski shared in her testimony the tools used by Tinker AFB for successful conversion of more than 2,400 non-bargaining unit employees in April 2006, and the command's ongoing efforts to prepare their remaining installations for conversion in October 2006 and January 2007.

"We worked extremely hard during the planning phases of NSPS to be sure we emphasized training, as well as communication," she told members of the panel, which included U.S. Senator George V. Voinovich , R-Ohio, and Senate Homeland Security Committee Chairwoman Susan Collins, R-Maine. "We continue to work these two specific areas, and we think those investments are paying off. "

Deputy Secretary of Defense Gordon England also addressed the panel as a witness.

The general equated NSPS training for civilian and military personnel to that of an operational mission, stressing successful execution of the mission must be equaled by preparation. Education of both employees and management is vital, she said.

The general cited specific examples used at Tinker in both the preparatory and executory phases.

Tinker's communication strategy established information flow by developing an NSPS Web site, conducting town hall meetings and commanders' calls, using marquees, and publishing (base) newspaper articles.

"By quickly and efficiently disseminating information, we equipped our workforce with the tools necessary for transition to NSPS, engaged their participation, and encouraged feedback on their questions and concerns," she said.

The base placed a strong emphasis on training employees and managers, both civilian and military. "All employees who were deploying into NSPS received approximately eight hours of soft skills' training covering change-management, as well as eight hours of NSPS specifics," she said.

Housing 34 percent of the Air Force's civilian population, the general stressed to the panel AFMC's commitment to the NSPS transition.

"Such a large civilian population warrants our best effort in implementing NSPS, and that is exactly what we have endeavored to do in AFMC.

"The key message is that NSPS is much more than a new personnel system," she said. "It is a commander's responsibility and must be led from the top. Our four-star commander has relayed the importance of NSPS to installation commanders and individual employees."

She explained how general officers from each Air Force major command traveled to installations in their commands, giving "spread-the-word" briefings, which underscored the importance of NSPS.

Although the first performance cycle for Tinker's first NSPS employees won't close out until October 31, with payout results from the cycle occurring in January 2007, Gabreski said the base is already realizing the benefits from the NSPS.

"I have visited Tinker and have spoken with both employees and managers," she said. "They have told me they feel a stronger link to the mission."

The general said NSPS deployment hasn't been without its challenges, which include comparison to the "old way" of doing things.

"Despite these challenges, the Tinker implementation has shown the tremendous potential and benefits of NSPS, which strengthens our commitment to successfully implement across the command," she said.

Between October 2006 and January 2007, AFMC's other nine bases will deploy NSPS to more than 10,000 nonbargaining unit employees.

Lopez is with Air Force Materiel Command Public Affairs.

AIR FORCE PRINT NEWS (OCT. 14, 2006)
LOGISTICS OFFICERS GIVEN CHALLENGE AT CONFERENCE

Will Daniel

SAN ANTONIO—The commander of the Air Force Materiel Command took the stage at the Logistics Officer Association National Conference Oct. 10 to tell 1,350 logistics officers to get lean and expect to be in a long war.

Gen. Bruce Carlson gave the officers an overview of the enemy and how it exploits Islam and uses terrorism as a means to an end. He said Islamic terrorists seek to overthrow and control moderate nations.

"If they are supported by just 1 percent of the Muslim population, that equates to over 13 million extremists," he said.

Carlson said the U.S. strategy to win the war on terrorism is to prevent terrorist attacks before they occur, deny weapons to outlaw regimes and their terrorist allies, deny radical groups the support and sanctuary of outlaw regimes, and deny the militants control of any nation and future recruits by advancing democracy and hope across the Middle East.

The general discussed the Air Force's challenges as it transforms itself. He said the Service has flown 427,000 sorties since the start of operations. Nearly 180,000 Air Force members are involved in operations while humanitarian and relief efforts continue, and Air Mobility Command takes off every 90 seconds 24/7.

But the Air Force will be losing 57,500 members as a result of current transformation initiatives. It will be the smallest end strength since the post-World War II drawdown, he said.

Aging aircraft were also on the general's agenda of Air Force challenges as he noted an average age of an Air Force aircraft is 23.5 years—and aging. The Air Force is recapitalizing its fighter fleet with F-22 Raptor and F-35 Lightening production, but he said officials recently announced plans for a new long-range, high-payload bomber.

"It's a challenging environment, but the sky is not falling," Carlson said. "The war on terrorism costs $318 million a day, budgets are forecast to decline, and buying power is reduced by rising costs.

"We will win the war on terrorism, take care of our airmen, and recapitalize the Air Force. We will do this by becoming more efficient through Air Force-wide process improvements, reducing legacy systems and restoring a positive perception of the Air Force acquisition system."

One Materiel Command

The general discussed his One Materiel Command concept. He said there will be more emphasis on seamless life-cycle management, integration of ongoing improvement initiatives across AFMC focusing on lasting change, and elimination of nonvalue-added processes.

"We will standardize AFMC processes and organizations, and collaborate with stakeholders on implementation," he said. "I will work hard on this.

"How are you part of the solution?" the general asked the "loggies" in the audience. "Know your counterpart in the depot. Learn how to leverage shortages—fewer people, fewer supplies. Do you think every base needs

an engine shop, for example? You will have inputs into these questions.

"Are you ready to be a 'materiel officer?'" he asked. "We are looking for people who can manage weapons systems in life-cycle terms.

"My hat's off to you and what you do for DoD."

Also speaking at the conference were Gen. Bill Looney, commander of the Air Education and Training Command, and Lt. Gen. Donald J. Wetekam, the Air Force deputy chief of staff for logistics, installations, and mission support.

Looney, whose command is headquartered at nearby Randolph Air Force Base, said the nation has a great challenge ahead with the global war on terrorism.

"We must meet it, and we must win," he said. "The price will be high."

The AETC commander said the four-star generals were asked to identify "those things that we can quit doing. The truth is there isn't anything we can quit doing," he said. "Whenever we've been asked to quit doing something, we started it back up again after a time."

The general gave an example of how Lean Six Sigma is working within his command. He said at one AETC base it took 22 days to discharge an airman who was not going to continue his Air Force career.

"We cut that to 11 days using half the personnel," he said. "And that is saving $500,000 a year at that base alone."

Wetekam said the Air Force's priorities are winning the war on terrorism, developing and caring for airmen, and modernizing and recapitalizing aircraft and equipment. He said funding those priorities will come from organizational efficiencies brought about by restructuring and getting rid of redundant activities, process efficiencies, and by retiring aging weapon systems.

"We have other weapon systems coming on line that can do the job as good, or better, than some current systems," he said.

Daniel is with Defense Supply Center Richmond Public Affairs.

OPM OFFERS NON-DOD AGENCIES DIRECT-HIRE AUTHORITY FOR HARD-TO-FILL ACQUISITION POSITIONS

For almost one year, non-Department of Defense agencies have been given a direct-hire authority to attract candidates "with unusually high qualifications." The authority stems from regulations issued by the Office of Personnel Management and published in the *Federal Register*.

The direct-hire authority covers federal acquisition positions covered under title 41 of the United States Code when there is a severe shortage of well-qualified candidates, as defined in Title 5 of the Code of Federal Regulations. The direct-hire regulations are effective Oct. 12, 2006, and will expire Sept. 30, 2007. The regulations can be found at <http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/E6-15016.htm>.

Conferences, Workshops & Symposia

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH PUBLIC AFFAIRS (OCT. 20, 2006)

ROCKET SCIENTISTS GATHER AT SPACE PROPULSION PROGRAM REVIEW

Erin Crawley

ARLINGTON, Va.—The Air Force Office of Scientific Research here recently completed a program review on space propulsion and power in Annapolis, Md.

About 150 rocket scientists from leading universities and small businesses throughout the nation gathered to share recent results from their AFOSR-funded research and to hear about related Air Force initiatives.

"This event was very successful," said Dr. Mitat Birkan, program manager and conference host. "It is important to provide a forum where the principal investigators we fund can communicate with each other in an effective way. This venue also prompts attendees to ask provocative questions about space propulsion."

Birkan, who manages the space power and propulsion basic research investment portfolio at AFOSR, explained why continued funding toward this research is so important.

"We have to be able to continue superiority in space," Birkan said. "If we don't, then someone else will take over."

The keynote address was given by Dr. Mark Lewis, chief scientist of the Air Force. Lewis discussed Air Force initiatives in aerospace technology within the space propulsion arena, specifically high speed hypersonic flight, space access, and space technologies.

Other featured speakers included Jacques Gansler, vice president of research, University of Maryland and Roger Lipitz chair in public policy and private enterprise, and former under secretary of defense for acquisition, technology and logistics; and Dr. Thomas Russell, director, AFOSR Aerospace and Material Sciences Directorate.

"As I started researching basic research investments in this area, I discovered that Dr. Mitat's program is probably the strongest and the largest program in space propulsion and power in the United States," Russell said. "If it were not for Dr. Mitat's program, I'm not sure we'd actually have a sustained effort at this point in time across the DoD."

Many of the scientists at the event are conducting basic research aligned with the Air Force's long-term objectives in aerospace technology. These areas include hypersonics, harnessing energy systems, multifunctional materials, and micro-propulsion. Some scientists also presented futuristic theories.

For example, Dr. Mark Cappelli, a professor at Stanford University, presented, "Toward Reduced Wall-Effect Hall Plasma Accelerators." Cappelli's team is charged with the task of understanding the way hall thrusters work. A hall thruster is a type of plasma-based propulsion system for space vehicles.

"During my presentation I proposed the question, what if you could build a propulsion device that was free of any physical surface so you wouldn't have to worry about the degradation of the surface or engine because there isn't anything there. If you could do that, essentially you'd have a device that has a limitless life," Cappelli explained.

Many other topics were also presented at the program review. Major subject areas included plume dynamics, chemical propulsion, combustion stability innovations for liquid rocket engines, microchemical propulsion, electric propulsion, hall thrusters, and electrospray propulsion.

Additionally several workshops were conducted to brainstorm new areas of research. Workshop topics included multi-functionality in the design and operation of space propulsion systems, and advances in combustion stability for liquid rocket engines. These workshops are one way Dr. Birkan collected funding ideas for AFOSR's Aerospace and Materials Sciences Directorate.

The AFOSR aerospace and materials sciences directorate is responsible for research activities in aerospace, engineering, and materials. At present, its program mangers oversee more than 350 basic research projects. The four major projects in the directorate are solid mechanics and structures, structural materials, fluid dynamics, and propulsion.

Crawley is with Air Force Office of Scientific Research Public Affairs.

23RD ANNUAL TEST AND EVALUATION CONFERENCE

The 23rd Annual Test and Evaluation Conference will take place March 12–15, 2007, at the Westin Resort Hilton Head Island, Hilton Head Island, S.C. This national conference is invaluable to those tasked with directing and executing system development programs for the Department of Defense, Department of Homeland Security, Department of Energy, and other government departments tasked with various elements of our nation's security. Test planners, modeling and simulation users and developers, range operators, program managers, military personnel charged with system acquisition responsibilities, industrial professionals, and others under contract with the government to provide support to our nation's defenses will also benefit. For registration or more information on this year's event, consult <http://eweb.ndia.org/eweb/DynamicPage.aspx?Site=ndia&Webcode=EventList>.

23RD ANNUAL NATIONAL LOGISTICS CONFERENCE AND EXHIBITION

The 23rd Annual National Logistics Conference and Exhibition will be held March 19–22, 2007, at the Hyatt Regency Miami, Miami Convention Center, in Miami, Fla. Share insights with senior DoD leadership, top industry executives, project directors and program managers, information technology providers and developers, government policy makers and regulators, defense contractors and design professionals, third party logistics providers, and equipment suppliers and manufacturers. For more information on this year's event, contact Meredith Geary, meeting planner, at mgeary@ndia.org or call (703) 247-9476. For details on registration, watch the conference Web site at <http://eweb.ndia.org/eweb/DynamicPage.aspx?Site=ndia&Webcode=EventList>.

5TH ANNUAL U.S. MISSILE DEFENSE CONFERENCE

The 5th Annual U.S. Missile Defense Conference will be held March 19–23 , 2007, at the Ronald Reagan Building and International Trade Center, Washington, D.C. A key objective of the 2007 conference is to continue building the Ballistic Missile Defense System (BMDS) team relationships that will in turn make development of a global missile defense system a successful reality. The BMDS Team includes members of the Missile Defense Agency (MDA), Department of Defense, military service staffs, and industry.

The conference—hosted by the American Institute of Aeronautics and Astronautics (AIAA), in cooperation with Northrop Grumman Corporation and supported by MDA—will expose the BMDS to the entire missile defense community, educate conference participants on the system-level approach to BMDS development, and serve as an exchange of ideas on BMDS evolution. Discussions will focus on the evolutionary development of a global, layered, integrated BMDS; the integration and testing of BMDS capability; the status of fielding BMDS elements; and the current political/policy environment, including the merits of extending BMDS capabilities to allies. Consistent with this focus is the theme of the conference, Global Ballistic Missile Defense—A Layered Defense. Register for the 2007 conference at <http://www.aiaa.org/content.cfm?pageid=230&lumeetingid=1475&viewcon=overview>.

5TH ANNUAL AFCEA-BELVOIR/PEO EIS INDUSTRY DAY

The Armed Forces Communications and Electronics Association–Fort Belvoir Chapter hosts the 5th Annual AFCEA-Belvoir/PEO EIS Industry Day to inform the IT community about the recent successes and the forward-thinking opportunities that the Department of Defense and the Department of the Army have asked PEO EIS to develop. The 5th Annual AFCEA-Belvoir/PEO EIS Industry Day will be held March 28-30, 2007, at the Marriott Bethesda North Hotel and Conference Center in Maryland.

This will be the 20th year that the PEO has been in the acquisition business. PEO STAMIS (Standard Army Management Information Systems) began in April 1987 with five programs. Now, PEO EIS boasts an organization with more than 40 programs. The PEO, Deputy PEOs, and PMs will talk about the year ahead and the milestones they face. Industry Day 2007 promises to be bigger and better than ever.

For information on government participation at Industry Day, call Dean Sprague at (703) 806-4557 and for industry participation, contact Mark Gable at (800) 878-2940 x235. For information on AFCEA-Belvoir visit their Web site at <http://belvoir.afceachapter.org> or contact David Livingstone at (301) 399-4231.

Conferences, Workshops & Symposia

GUNS AND MISSILE SYSTEMS CONFERENCE AND EXHIBITION

The 42nd Annual Armament Systems: Guns and Missile Systems Conference and Exhibition will be held April 23-26, 2007, in Charlotte, N.C. The 2007 conference will present topics that demonstrate how our nation's current gun, munition, and missile system technologies can be adapted and evolved to meet tomorrow's missions and operations. For more information on the conference, contact Heather Horan, meeting planner at hhoran@ndia.org or call (703)247-2570. Watch for registration details at <http://eweb.ndia.org/eweb/DynamicPage.aspx?Site=ndia&Webcode=EventList>.

DEFENSE ACQUISITION UNIVERSITY ACQUISITION COMMUNITY CONFERENCE/SYMPOSIUM 2007

Mark your calendar and plan ahead to attend the April 17, 2007, Defense Acquisition University Community Conference/Symposium, sponsored by the Defense Acquisition University Alumni Association. Watch the association Web site at <http://www.dauaa.org> for future announcements, updates, and registration information.

25TH DARPA SYSTEMS AND TECHNOLOGY SYMPOSIUM

The 25th Defense Advanced Research Projects Agency (DARPA) Systems and Technology Symposium (DARPATech) is scheduled for the week of August 6, 2007, at the Anaheim Marriott in Anaheim, Calif. Registration for DARPATech 2007 is expected to open in April 2007. Watch the DARPA Web site at < http://www.darpa.mil > for details on the 2007 event.

JOINT SERVICES ENVIRONMENTAL MANAGEMENT (JSEM) CONFERENCE

The Joint Services Environmental Management (JSEM) Conference will be held May 21-24, 2007, at the Greater Columbus Convention Center in Columbus, Ohio. JSEM 2007 is a comprehensive summit on the evolving world of environment, energy, and geospatial information within DoD. JSEM 2007 will highlight the many new and innovative ways the Department of Defense, other federal agencies, states, and the defense industry are meeting mission needs while protecting the environment. The conference affords the opportunity to share ways to integrate environment, energy, and geospatial information management into Defense operations. It also will address a wide range of perspectives, including policy, implementation, best management practices, data management, and technology.

The JSEM 2007 Conference and Exhibition is evolving, just as Defense business practices are evolving. Conference organizers are merging Energy and Geospatial Information Management into the 2007 event, which is now recognized as the most significant event for environmental policy makers, practitioners, and professionals. Future registration details will be posted to the conference Web site at <http://www.jsemconference.com/2007/registration.htm>.

DARPA ANNOUNCES THIRD GRAND CHALLENGE

The Defense Advanced Research Projects Agency (DARPA) has announced plans to hold its third Grand Challenge competition on Nov. 3, 2007. The DARPA Urban Challenge will feature autonomous ground vehicles executing simulated military supply missions safely and effectively in a mock urban area. Safe operation in traffic is essential to U.S. military plans to use autonomous ground vehicles to conduct important missions. DARPA will award prizes for the top three autonomous ground vehicles that compete in a final event where they must safely complete a 60-mile urban area course in fewer than six hours. First prize is $2 million, second prize is $500,000, and third prize is $250,000. To succeed, vehicles must autonomously obey traffic laws while merging into moving traffic, navigating traffic circles, negotiating busy intersections, and avoiding obstacles. The DARPA Grand Challenge Web site <http://www.darpa.mil/grandchallenge> is the primary resource for information about the Urban Challenge event.

FEDERAL ACQUISITION CONFERENCE AND EXPOSITION (FACE) POSTPONED TO 2007

The Federal Acquisition Institute (FAI), based upon recommendations of the Federal Acquisition Conference and Exposition (FACE) Steering Committee, composed of the FACE sponsors, determined not to hold FACE in 2006. The next FACE will be in 2007. It will continue to be sponsored by the Chief Acquisition Officers Council, Federal Acquisition Institute, U.S. General Services Administration, and Department of Defense. For more information on 2006 FAI scheduled events, visit the FAI Web site at <http://www.fai.gov/resource/face2006.htm>.

Acquisition & Logistics Excellence

ARMY NEWS SERVICE (AUG. 25, 2006)

U.S. ARMY MEDICAL RESEARCH & MATERIEL COMMAND EMPLOYEE EARNS NATIONAL BIG AWARD

Jerry Harben

FORT DETRICK, Md.—Jerome K. Maultsby has been selected for the 2006 Blacks in Government Meritorious Service Award. He is associate director of the office of small business programs for U.S. Army Medical Research and Materiel Command.

The BIG Award goes to one African-American soldier and one civilian each year.

"I have a passion for what I do," Maultsby said. "I really like being able to provide assistance to people. You don't get any extra money, but there's satisfaction knowing you're helping someone."

Maultsby's job is to help small businesses and minority institutions compete for contracts with USAMRMC. He gives them information that larger businesses have readily available, and ensures all potential contractors have fair opportunities to succeed.

"I try to educate, encourage, and empower small business and academia. That's my goal," he said. "There are a lot of prospective contractors who really want to learn good information on how to cut through the red tape. I've tried to demystify the process and tell people what they need to know, not what they want to hear."

USAMRMC increased contract awards to small businesses from $285 million in fiscal 2004 to $383 million in fiscal 2005, or about 48 percent of the command's contract awards.

"These noteworthy procurement metrics clearly demonstrate how Mr. Maultsby has effectively orchestrated mutually beneficial strategic business relationships," stated the nomination for the award.

Maultsby is also an advocate for education of minorities. He was instrumental in forming the Maryland Research and Applied Sciences Consortium in 2004. The group comprises representatives from five Historically Black Colleges and Universities (HBCU), and minority institutions.

Jerome K. Maultsby is a recipient of the 2006 Blacks in Government (BIG) Meritorious Service Award. The national honor goes to one African-American soldier and one civilian each year.
Photograph courtesy U.S. Army Medical Research & Materiel Command.

Before going to work for USAMRMC, Maultsby worked in acquisition during a 20-year Army career, retiring as a lieutenant colonel in 2001.

"I'm very humbled," he said of the BIG Meritorious Service Award. "It's quite an honor."

Harben is with U.S. Army Medical Command at Fort Detrick, Md.

AIR FORCE MATERIEL COMMAND NEWS SERVICE (SEPT. 7, 2006)

AIR FORCE RESEARCH LAB NAMES 2006 FELLOWS

Jill Bohn

WRIGHT-PATTERSON AIR FORCE BASE, Ohio—Air Force Research Laboratory officials are honoring seven scientists and engineers as new fellows during an annual awards banquet Sept. 19 at the National Museum of the United States Air Force.

Designed to recognize and reward AFRL's most outstanding in-house scientists and engineers, the fellows program encourages further research and development

by providing each new fellow a grant of $100,000 per year for two years, in addition to his or her current budget.

The fellows to be honored this year are Dr. Paul Barnes, Dr. Hugh DeLong, Dr. Dennis Goldstein, Dr. Kumar Jata, Frank Marcos, Dr. Michael Murphy, and Carl Snyder.

"AFRL fellows are nominated by their directorates and selected by the AFRL commander through a highly competitive process that recognizes our very best scientists and engineers," said Dr. Thomas Cruse, AFRL chief technologist.

Dr. Paul Barnes

Propulsion Directorate at Wright-Patterson AFB, is recognized for high-temperature superconductors. His efforts advanced the yttrium barium copper oxide-coated conductor. The YBCO conductor allows compact power for magnets critical to directed energy weapons.

Dr. Hugh Delong

Air Force Office of Scientific Research at Arlington, Va., is a recognized leader in the area of ionic liquids. His scientific reputation has given the Air Force a position of leadership in the areas of compact power, corrosion, electrode position, nanocomposite research, bionanotechology, biomimetics, biomaterials, and biointerfacial sciences.

Dr. Dennis Goldstein

Munitions Directorate at Eglin AFB, Fla., is internationally recognized in polarimetry research and optical correlation technology. His key scientific contributions include target and background signature phenomenology, scientific basis of on-munition processing making seekers "smart" enough to be autonomous, and controlled laboratory environment testing of sophisticated seekers.

Dr. Kumar Jata

Materials and Manufacturing Directorate at Wright-Patterson AFB, is recognized in the development, processing, characterization, and properties of metallic alloys for aerospace applications. His leadership in fatigue and fracture, friction-stir welding, aluminum-lithium alloy development, and corrosion research has been critical to Air Force systems.

Frank Marcos

Space Vehicles Directorate at Hanscom AFB, Mass., is an expert on the effects of the earth's atmosphere on Air Force space systems. He developed a revolutionary approach to modeling the total density of the atmosphere and satellite orbital drag, now used operationally at Air Force Space Command.

Dr. Michael Murphy

Human Effectiveness Directorate at Brooks City-Base, Texas, is a leader in understanding the effects of human exposure to directed energy systems and non-lethal weapons, both areas of vital interest to the Air Force.

Carl Snyder

Materials and Manufacturing Directorate at Wright-Patterson AFB, is an international leader in the development and transition of fluids and lubricants for Air Force systems. The hydraulic fluids, greases, and di-electric coolants developed under his leadership are used in virtually all Air Force, Navy, and Army aircraft.

Bohn is with Air Force Research Laboratory Public Affairs.

AIR FORCE RESEARCH LABORATORY PUBLIC AFFAIRS (SEPT. 13, 2006)

RESEARCH LAB SELECTIONS EARN SMALL BUSINESS AWARDS

Francis L. Crumb

ROME, N.Y.—Two small businesses nominated by Air Force Research Laboratory Information Directorate engineers have been selected as winners of the 2006 Tibbetts Award by the U.S. Small Business Administration. The award is named for Ronald Tibbetts who is considered the father of the congressionally directed Small Business Innovative Research (SBIR) Program.

Scheduled to receive the awards during ceremonies held Sept. 26 in Washington, D.C., are ITCN of Dayton, Ohio, and Lumidigm Inc. of Albuquerque, N.M.

ITCN, a small veteran-owned business with 18 employees, was nominated for the award by Barbara L. Frantom and Phillip H. Powers of the directorate's Information Systems Division at Wright-Patterson Air Force Base, Ohio. The company is developing technology to identify aircraft network cabling problems.

Lumidigm, one of New Mexico's 40 fastest-growing technology companies for the past two years, was nominated by Thomas J. Parisi of the directorate's Information Grid Division at the AFRL Rome Research Site. The company has developed a sensor that collects identifying fingerprint information from both the surface and subsurface

of the skin—a radical departure from conventional optical fingerprint technology.

The SBIR program funds early-stage research and development at small high-technology companies. It is designed to stimulate technological innovation; increase private sector commercialization of federal research and development; increase small business participation in federally funded research and development; and to foster participation by minority and disadvantaged firms in technological innovation.

Selection criteria for the Tibbetts Award include the economic impact of technological innovation, business achievement and effective collaborations, and demonstrated state and regional impact.

Crumb is with Air Force Research Laboratory Public Affairs.

AIR FORCE PRINT NEWS (SEPT. 14, 2006)
CHANGES TO ACQUISITION PROCESSES REDUCE DELIVERY TIME

Staff Sgt. C. Todd Lopez, USAF

WASHINGTON—Changes in the Air Force's acquisition community have already resulted in quicker delivery of capability to the warfighter, according to the assistant secretary of the Air Force for acquisition.

The Air Force acquisition community is changing the way it does business to deliver capability faster and at a lower cost, said Sue Payton during testimony Sept. 7 before the House Appropriations Committee defense subcommittee.

"The Air Force understands 21st century challenges must be met by continued leverage of our nation's technology leadership to counter the future threats in this rapidly changing world," she said. "Everything we do in Air Force acquisition is dedicated to getting an operational, suitable, effective, best-value and affordable product to the warfighter, in the least amount of time."

Payton told legislators that in order to better serve the warfighter, the Air Force has made changes to its acquisition process. One of those changes includes development of a rapid response assessment committee to evaluate acquisition requirements before a final capability development document is produced.

To aid in risk management and decision making on critical aspects of selected acquisition programs, the Air Force has established both an acquisition strategy panel and an Air Force review board.

"The senior level boards provide comprehensive reviews with appropriate checks and balances before major decisions are made," Payton said. "The [boards] tend to get at the systemic problems."

Payton also said the Air Force now considers sustainment of new acquisitions early on in the process, to calculate those costs sooner rather than later.

"This allows us to get the technical data necessary to support operations for sources of repair decisions in the future," she said.

Already, changes in the acquisition community have resulted in some successes for the Air Force, Payton said.

With the small diameter bomb, the Air Force ensured design and technology for the weapon was matured during the competitive process, instead of after a contractor was selected. Also, the Air Force established realistic program baselines at the onset. Those efforts ensured a more rapid delivery of that weapon to the warfighter, Payton said.

"Everything we do in Air Force acquisition is dedicated to getting an operational, suitable, effective, best-value, and affordable product to the warfighter, in the least amount of time."

—Sue Payton
Assistant Secretary of the Air Force for Acquisition

"This allowed us to provide the required assets to the field one month ahead of schedule, and to give commanders additional combat options as the units are getting ready to reply," she said.

When the United States Central Command Air Force commander wanted to deliver smaller sized weapons, with the same accuracy as that of the GBU-31 Joint Direct Attack Munition, the Air Force acquisition community responded. The new weapon would need to kill a target as effectively as the GBU-31 JDAM but work in a smaller area and cause less collateral damage. Air Force acquisition officials eventually delivered the 500-pound GBU-38 JDAM guided bomb.

"Pressing forward with these new processes, our acquisition team was able to rapidly analyze, test, and field this capability in 43 days for the F-15E Strike Eagle and in 52 days for the F-16 Fighting Falcon," Payton said. "As you may recall, it was the F-16, employed with this new GBU-38, that eliminated al Qaeda terrorist Abu Mousab al Zarqawi."

In past years, the Air Force has been the subject of much scrutiny on Capitol Hill over its acquisition practices. In fact, one senior Air Force official received jail time as a result of inappropriate acquisition activities. Payton said the Air Force acquisition community is now beyond those kinds of problems.

"I am convinced that the men and women of the Air Force, in this acquisition community, are committed to restoring public confidence and credibility in the acquisition process and our products," she said.

Lopez is with Air Force Print News.

DEPARTMENT OF DEFENSE NEWS RELEASE (SEPT. 19, 2006)

DEFENSE SCIENCE BOARD CELEBRATES 50 YEARS

Sept. 20, 2006, marks the 50th anniversary of the first meeting of the Defense Science Board (DSB). The DSB was formed as a recommendation of the Second Hoover Commission task force on research, chaired by then Bell Labs President Mervin Joe Kelly, in order to "canvas periodically the needs and opportunity for studies leading to radically new weapons systems."

The DSB was formally established with the approval of its first charter on Dec. 31, 1956, by then Assistant Secretary of Defense (Research and Development) Clifford Furnas. Initial membership was 25 experts in science and technology headed by the DSB Chairman, Howard P. Robertson of the California Institute of Technology.

The DSB has undergone several adjustments to its charter since 1956, but its primary function remains to advise senior Department of Defense leadership on matters relating to science, technology, research, engineering, manufacturing, the acquisition process, and other matters that are of special interest to the DoD.

Membership today totals 42 individuals from industry and academia plus former DoD officials and retired flag officers. The current chairman is William Schneider Jr.; the vice chairman is Vincent Vitto.

The DSB Web site at <http://www.acq.osd.mil/dsb> provides access to reports, the latest DSB charter, and a detailed history of the DSB.

ARMY NEWS SERVICE (SEPT. 20, 2006)

RDECOM SWEEPS RESEARCH AND DEVELOPMENT AWARDS

Trinace Johnson

ABERDEEN PROVING GROUND, Md.—The 2006 Research and Development Laboratory of the Year Competition award winners were announced Sept. 14 by the Department of the Army with five U.S. Army Research, Development and Engineering Command (RDECOM) organizations capturing top spots in every award given.

Twelve Army laboratories and two collaboration teams competed in research and development efforts, warfighter focus, support of soldiers in the war on terrorism, and homeland security.

Assistant Secretary of the Army for Acquisition, Logistics and Technology (ASAALT) Claude Bolton announced the following winners:

- **Large Research Laboratory**: Army Research Laboratory (ARL)
- **Large Development Laboratory**: Armament Research, Development and Engineering Center (ARDEC)
- **Small Development Laboratory**: Natick Soldier Center (NSC)

The two Collaboration award winners are:

- **ARL and Tank Automotive Research Development and Engineering Center** (TARDEC), for Powder Panel for Fuel Tank Protection
- **Natick Soldier Center and Army Research Institute of Environmental Medicine**, for Nutritionally Optimized First Strike Rations

"I am extremely proud of the dedicated efforts put forth by the labs and centers," said Maj. Gen. Rodger A. Nadeau, RDECOM commander. "This is a great accomplishment, not just for RDECOM, but for the soldiers who will benefit from the level of technology put out by our remarkably talented workforce," Nadeau said.

"I know that the winners of the RDL of the Year Awards worked exceptionally hard for their accomplishments, and we are very proud of their efforts. This is more than a win for them; this is a win for soldiers," said David J. Shaffer, deputy to the commander, RDECOM.

The RDL Awards Program was established in 1975 to honor Army research and development labs that have made outstanding contributions in science and technology, providing the Army's warfighters with the best capabilities in the world. The RDL awards recognize labs for their outstanding contributions and their impact on enhancing the capability of Army operational forces worldwide.

"The achievements of our centers and laboratories should demonstrate to soldiers the robust commitment of this command and its continuous efforts in providing soldiers the technology needed to defeat the enemy," said RDECOM Command Sgt. Maj. Eloy Alcivar.

RDECOM manages more than 17,000 military, civilians and direct contractors; with a multi-billion dollar annual budget; eight Labs, Research, Development and Engineering Centers; and nine International Technology Centers around the globe.

Johnson is with U.S. Army Research, Development and Engineering Command.

U.S. TRANSPORTATION COMMAND PUBLIC AFFAIRS (SEPT. 22, 2006)
COMMAND RECEIVES TRANSFORMATION AWARD

Bob Fehringer

SCOTT AIR FORCE BASE, Ill.—U.S. Transportation Command received a Leadership in Government Transformation award from the E-Gov Institute Sept. 16 for Enterprise Architecture work in support of the expanded Distribution Process Owner mission. The award recognizes best practices in developing and implementing successful Enterprise Architectures.

It was accepted by Steve Pierson, Command, Control, Computer and Communications Directorate, U.S. Transportation Command, in a ceremony at the Ronald Reagan Building in Washington, D.C.

According to Pierson, Federal agencies are required to build architectures to better plan for capabilities and technology investments while ensuring agency programs receive funding.

Through Office of Management and Budget's Federal Enterprise Architecture and Department of Defense's Business Enterprise Architecture, this supply chain-based framework known as the Joint Deployment and Distribution Architecture is designed to create greater efficiencies and streamline inter-agency collaboration and communication.

"The latest challenge in expanding agency-based enterprise architectures is attempting to understand broader relationships and interdependencies among partnering agencies," Pierson said.

"U.S. Transportation Command has successfully pioneered an approach that has effectively aligned interdependent yet disparate enterprise architectures, enabling a holistic view of end-to-end scenarios, portfolios, and organizations," he noted.

"By working with the Office of the Secretary of Defense, Army, Navy, Air Force, Marine Corps, and the Defense Logistics Agency, U.S. Transportation Command has been able to map the interconnections between agencies without drastically altering individual agency architectures," Pierson continued.

"Benefits gained through this federated approach were the use of a reference model allowing participants to describe their business using a common language, resulting in an ability to view and display broader end-to-end processes including their seams," he explained.

"Of importance, the framework provides an outstanding foundation to support capability analysis, operational planning, program management and system development, and IT investment," Pierson added. "It is estimated this effort conservatively resulted in a cost avoidance of more than $20 million."

Air Force Brig. Gen. Michael Basla, director of Command, Control, Communications and Computer Systems Directorate, U.S. Transportation Command, expressed his appreciation for the award.

"We are extremely pleased to have the efforts of so many people at U.S. Transportation Command, especially the enterprise architects, recognized by the E-Gov Institute with the distinguished Leadership in Government Transformation award," Basla said.

"Of course, the team didn't accomplish this alone," he noted. "U.S. Transportation Command worked with the Army, Navy, Air Force, Marine Corps, Defense Logistics Agency, and Office of the Secretary of Defense to map the interconnections between agencies, leveraging the great work done by individual agency architects."

Fehringer is a contractor with U.S. Transportation Command Public Affairs.

72ND AIR BASE WING PUBLIC AFFAIRS (SEPT. 22, 2006)

PROCESS IMPROVEMENT CLASS A PRIORITY AT OKLAHOMA CITY AIR LOGISTICS CENTER

Brandice J. Armstrong

TINKER AIR FORCE BASE, Okla.—As another session of the Green Belt Training Course taught by The Lean Institute here shifts into high gear, Oklahoma City Air Logistics Center senior managers stress the importance of the class.

The Green Belt Training Course trains 20 students at a time and emphasizes Lean and Six Sigma tools including 5S + 1, value stream mapping and cause and effect diagrams. Since October 2005, more than 100 Lean classes have been offered.

"The course is meant to show us the power of process thinking and give us the basic tools to help us improve the way we do our work," said Air Force Col. Rick Matthews, OC-ALC vice director, who is enrolled in the current class.

Before a session begins, students are divided into teams and assigned a project to complete using techniques taught in the class.

"The purpose of a project is to ensure the students know how to apply techniques learned in the class into a real-world situation," said Wade Wolfe, Transformation, Integration, and Process Improvements Division chief with the Plans and Programs Directorate.

Projects assigned for the current session include reducing the time it takes to have a prescription refilled at the base pharmacy, improving the mobility process in the 552nd Air Control Wing, reducing the process time for the Air Force Materiel Command purchase request form, and developing a more efficient way to ensure the 76th MXW is paid properly for work performed when repairing engine parts that exceed technical orders limits, Wolfe said.

The Green Belt Training course is a key component to meeting the challenge by Gen. Bruce Carlson, Air Force Materiel Command commander, to reduce costs and improving equipment availability, Wolfe said.

Since the program's induction, there have been several process improvements implemented, not only on the shop floor, but also in the administrative areas.

The F110 squadron in the 748th Combat Sustainment Group has improved the Air Force Technical Order-22 review and approval process. The benefits include an 88 percent reduction in overdue responses and a 54 percent reduction in average days open, which has lessened from 39 to 17 days, Wolfe said.

Armstrong is with 72nd Air Base Wing Public Affairs.

THE ARMY'S DISTRIBUTED LEARNING SYSTEM WINS 2006 EXCELLENCE IN ENTERPRISE INTEGRATION AWARD

NEWPORT NEWS, Va. (Sept. 14, 2006)—The Association for Enterprise Integration (AFEI) has recognized the Distributed Learning System (DLS), a program of the U.S. Army's Program Executive Office Enterprise Information Systems, as the government winner of the 2006 Excellence in Enterprise Integration Award. Given annually to one government and one industry project team for excellence and innovation in developing and deploying enterprise solutions, the award is intended to recognize achievement and best practices for projects that advance enterprise integration.

DLS demonstrated the best applications of technology and leadership to improve enterprise performance among the 30 government submissions for the 2006 awards program. The DLS nomination stood out because of its far-reaching implications to the entire Army.

DLS is the infrastructure that delivers distributed learning by bringing training to the soldier anywhere, anytime, 24/7. Using state-of-the-art technology, DLS streamlines training processes; automates training management

functions; delivers training using electronic means; and enables military and civilian personnel, training developers, training managers, unit commanders, and training NCOs to access training using the Web.

DLS is responsible for fielding multiple training systems simultaneously, with the success of each program directly impacting the Army's ability to meet its training mission. To date, DLS has trained over 600,000 soldiers through one of the five components it supports: Digital Training Facilities, Enterprise Management Center, Army Learning Management System, Army e-Learning, and Deployed Digital Training Campuses. The components that make up DLS bring the Army one step closer to achieving its goal of providing one stop shopping for training information and resources.

For more information on the Army's Distributed Learning System, visit <www.dls.army.mil>. For more information on the Association for Enterprise Integration, visit <www.afei.org>.

LOGISTICS MODERNIZATION PROGRAM WINS BACK-TO-BACK AWARDS, CONTINUES TO TURN CORNER

Marlton, N.J. (Sept. 22, 2006)—If the Logistics Modernization Program's recent success is any indication, the future of Army logistics is bright. The Logistics Modernization Program (LMP) recently beat out 50 contestants to win the 2006 Excellence in Enterprise Integration Award during the Association for Enterprise Integration's (AFEI) Information Sharing Conference. Shortly after, LMP received an Honorable Mention in the Military Logistics Program of the Year award category during the Institute for Defense and Government Advancement's (IDGA) Military Logistics Summit. The two awards come at an important time as LMP continues to drive toward success.

"As the world's largest fully integrated supply chain planning and execution solution, these awards recognize the entire LMP Team and their dedication in supporting America's soldiers," said Army Col. Scott Lambert, project manager.

The Logistics Modernization Program (LMP) recently beat out 50 contestants to win the 2006 Excellence in Enterprise Integration Award during the Association for Enterprise Integration's (AFEI) Information Sharing Conference. Pictured at the awards ceremony held Sept 21, 2006, at the AFEI luncheon are from left: Sheri Thureen, Computer Sciences Corporation vice president and LMP program manager; Army Col. Scott Lambert, project manager, LMP; and Dave Chesebrough, president, AFEI. Photograph courtesy Association for Enterprise Integration.

Computer Sciences Corporation is the prime systems integrator for LMP. CSC Vice President and LMP Program Manager Sheri Thureen commented: "The LMP Team is absolutely committed to delivering program excellence. This recognition for our team's successes in supporting our troops is a tremendous honor for all of us at CSC and the rest of the LMP Team."

Following on the heels of AFEI's award, at the IDGA Military Logistics Summit LMP received an Honorable Mention in the Military Logistics Program of the Year award category. LMP was acknowledged for its growth as one of the top innovators in logistics technology, LMP was also recognized for its efficiency in helping the Army and Department of Defense create a fully integrated environment that builds, sustains, and generates warfighting capabilities through an integrated logistics enterprise. In addition to showing measurable performance improvement, LMP's use of open, scalable information systems architecture and its unrivaled success at system availability, response time, automated processing, and security access put it ahead of other candidates.

As the cornerstone of the Single Army Logistics Enterprise, LMP provides national-level logistics business practices that revolutionize the Army's supply chain. By eliminating extensive manual intervention, LMP reduces the time, funding, and human resources required to process the millions of transactions the Army initiates on an annual basis.

Since its deployment in July 2003, LMP has utilized the best in Enterprise Resource Planning (ERP) technology, allowing for continual improvement in warfighter readiness and decision making.

LMP will be fully deployed in 2010 with the support of the Army's Program Executive Office, Enterprise Information Systems (PEO EIS). LMP will manage $4.5 billion in inventory, process greater than $5 billion in customer sales, manage more than $7 billion in Army obligations, and be used by 17,000 professionals.

For more information about LMP, visit <http://www.wlmp.com>.

AIR FORCE PRINT NEWS (OCT. 2, 2006)

AIR FORCE LAUNCHES YOUNG INVESTIGATORS RESEARCH PROGRAM

William J. Sharp

ARLINGTON, Va.—Air Force Office of Scientific Research officials announced Oct. 2 an award of approximately $6.3 million in grants to 21 scientists and engineers who submitted winning research proposals through the Air Force's new Young Investigator Research Program.

The program is open to scientists and engineers at research institutions across the United States, and those selected will receive the grants over a three-year period.

Competition for YIP grants is intense. A total of 145 proposals were received in response to the AFOSR broad agency announcement solicitation in major areas of interest to the Air Force. Interest areas include aerospace and materials sciences, chemistry and life sciences, mathematics and information sciences, and physics and electronics. AFOSR officials selected proposals based on the evaluation criteria listed in the broad agency announcement.

"AFOSR is proud to participate in the President's National Competitive Initiative by supporting the exciting research of these 21 outstanding scientists and engineers," said Dr. Brendan Godfrey, AFOSR director. "The AFOSR Young Investigator Research Program will grow to at least 50 grants over the next three years."

The program supports scientists and engineers who have received doctorate or equivalent degrees in the last five years. Grant recipients must show exceptional ability and promise for conducting basic research.

The objective of this program is to foster creative basic research in science and engineering, enhance early career development of outstanding young investigators, and increase opportunities for the young investigators to recognize the Air Force mission and the related challenges in science and engineering.

Sharp is with Air Force Office of Scientific Research Public Affairs.

AMERICAN FORCES PRESS SERVICE (OCT. 4, 2006)

DOD PROMOTES ENERGY INITIATIVES TO STRETCH DOLLARS, IMPROVE EFFICIENCY

Donna Miles

WASHINGTON—The Defense Department is exploring ways to make its weapon systems and facilities more fuel-efficient and less vul-

nerable to market fluctuations and controls, senior defense officials told Pentagon reporters today.

John J. Young Jr., director of defense research and engineering, said DoD is putting more emphasis on improving the efficiency of its operations—for national security as well as financial reasons.

DoD is the United States' biggest energy consumer, using more than 300 million barrels of oil every day. At those levels, a $10-a-barrel price hike puts a $1.3 billion dent in the defense budget and the funds appropriated to support the fighting force.

"When oil goes up $10 a barrel, there's a billion dollars in things we don't get to do … [for] the warfighter," Young said.

But heavy dependence on oil has other repercussions for the military, too, he said. The United States imports 58 percent of its oil, so there's no solid guarantee that it will always have access to the energy it needs.

A major goal in DoD's energy program "is making sure we … have multiple options in a changing marketplace for assured access to the energy that is required for the military to provide the nation's security," Young said.

And for deployed troops, oil dependence boils down to an even more basic vulnerability, Young explained. The more fuel they need, the more convoys they need to put on the road to deliver it, and the more frequently they expose themselves to improvised explosive devices and other threats.

He cited "a desire to have renewable-type [energy] sources in Iraq and deployed locations so we … potentially have to take less fuel to the deployed forces and therefore put fewer convoys at risk."

About three-quarters of DoD's oil consumption goes toward keeping the military on the move: its aircraft conducting sorties, its ships patrolling the seas, and its wheeled and tracked vehicles patrolling the streets of Iraq and Afghanistan.

The military is working to make these systems less oil-dependent without sacrificing capability, Young explained. It is looking into composite materials that make vehicles lighter and more efficient, and fuel-efficient engines and alternative fuel sources to decrease its dependence on fossil fuel.

The Air Force, DoD's biggest energy user, is considering setting a goal to reduce its fuel consumption in a way that doesn't shortchange training or operations, he said. The Marine Corps recently issued a solicitation for a new heavy truck that includes "a very specific and precise goal that decreased fuel consumption something like 15 to 20 percent" over its current Logistics Vehicle System.

"And so in each program space, we are going to set … fairly aggressive goals for achieving additional efficiencies" that apply technological advances, he said. "And we have already been doing that."

Many of those same strategies are already proving successful as DoD reduces the fuel needed to keep its 570,000 buildings and facilities around the world humming, Philip Grone, deputy under secretary of defense for installations and environment, told reporters. These facilities consume about 22 percent of DoD's energy requirements, but more than 8 percent of the electricity they use comes from renewable energy sources, he said. DoD hopes to raise that level to 25 percent by 2025, setting the standard for the rest of the federal government as well as industry, Grone told reporters.

Throughout the military, Grone said, he sees a continued trend toward tapping diversified energy sources—particularly more renewable sources—that offer more efficiency and reliability to the fighting force. "That is where I see us headed in the course of the next 10 to 25 years," he said. "Conceptually, that is where we want to be."

Whether from an operational or support viewpoint, all energy conservation ultimately supports the fighting force because it frees up defense dollars for critical training and equipment, Grone said. As these initiatives increasingly take shape, "resources will be freed up to go for higher priority efforts in supporting the mission … [and] the pointy end of the spear," he said.

Miles is with American Forces Press Service.

AIR FORCE MATERIEL COMMAND NEWS SERVICE (OCT. 6, 2006)

C-5 PROGRAMMED DEPOT MAINTENANCE EARNS ACCOLADES

Damian Housman

ROBINS AIR FORCE BASE, Ga.—The C-5 Programmed Depot Maintenance team at Robins AFB earned the 2006 Chief of Staff Team Excellence Award in a ceremony in Washington, D.C.

C-5 Galaxy workers from Robins Air Force Base, Ga., received the 2006 Chief of Staff Excellence Award. The C-5 Programmed Depot Maintenance team improved processes through Lean initiatives and implementation of critical chain project management, increasing the capacity to do unprogrammed C-5 work.
U. S. Air Force photograph by Sue Sapp.

Air Force Chief of Staff Gen. T. Michael Moseley presented the award to the C-5 PDM Process Improvement Team in late September.

"The increased tempo of operations in the war on terrorism means our strategic airlift assets are in greater demand by the warfighter," said Leigh Thompson, 559th Aircraft Maintenance Squadron deputy director. "We had to find a way to get C-5 (Galaxys) back in the war, and we have."

Thompson said the team has improved its processes through lean initiatives and implementation of critical chain project management, increasing the capacity to do unprogrammed C-5 work.

"CCPM is focused on critical chain buffering, pipelining, and buffer management," said Gail Turner, a scheduling supervisor. "It's a new management process that helps managers focus on schedule and cost instead of managing at the lowest level."

"We were having problems with damaged wire during removal and installation of the heat exchanger," said Calvin Williams, an aircraft electrician. "We moved some of the wiring out of the way, and used a protective cover for other wires to prevent damage during the repair process."

Another area of improvement was the repair of floor boards. The team had to identify the parts of the floor boards delaying completion of the process. "Floor boards were taking a lot of time. We were able to reduce floor board defects and cut flow days," said Darrell Harman, the sheet metal work leader. "We are just trying to get the aircraft out to the warfighter as soon as possible. That's the bottom line. Awards are nice, but we want better, faster ways to do things. The team has one vision, and that is to support the warfighter," he said.

Robins AFB maintenance members also received four Shingo prizes and the Franz Edelman Award this year.

Housman is with Warner Robins Air Logistics Center Public Affairs.

2006 U.S. ARMY ACQUISITION CORPS ANNUAL AWARDS CEREMONY

2006 Secretary of the Army Award for Excellence in Contracting
Barbara C. Heald Award
Winner: Kristina Jensen, U.S. Army Communications-Electronics Life Cycle Management Command (LCMC)

2006 Army Life Cycle Logistician of the Year Award
Army Life Cycle Logistician of the Year
Winner: Amelia (Amy) Barnett, PEO Missiles and Space, U.S. Army Aviation and Missile Life Cycle Management Center

2006 Department of the Army Research and Development Laboratory of the Year Awards
Large Research Laboratory of the Year
Winner: U.S. Army Research Laboratory (ARL)

Large Development Laboratory of the Year
Winner: U.S. Army Armament Research, Development and Engineering Center

Small Development Laboratory of the Year
Winner: U.S. Army Natick Soldier Center (NSC)

Collaboration Team of the Year
Winners: ARL and U.S. Army Tank Automotive Research, Development and Engineering Center, **and** NSC and U.S. Army Research Institute of Environmental Medicine

Secretary of the Army Acquisition Director and Project and Product Manager of the Year Awards
Acquisition Director of the Year at the Lieutenant Colonel Level
Winner: Lt. Col. James Simpson, Defense Contract Management Agency, Central Pennsylvania and Northern Iraq

Product Manager of the Year
Winner: Col. Philip Carey, PEO Intelligence, Electronic Warfare and Sensors, Infrared Countermeasures

Acquisition Director of the Year at the Colonel Level
Winner: Col. John Rooney, U.S. Army Test and Evaluation Command, U.S.Army Aberdeen Test Center (ATC), Aberdeen Proving Ground

Project Manager of the Year
Winners: Col. Jonathan Maddux, Program Manager Future Combat Systems (Brigade Combat Team) (FCS(BCT)), FCS(BCT) Network Systems Integration **and** Col. Mark Rider, PEO Ammunition, Maneuver Ammunition Systems—Direct Fire

Army Acquisition Excellence Awards
Individual Sustained Achievement
Winners: Maj. Carl Kimball, PEO Simulation, Training and Instrumentation, Assistant Product Manager for Live Training Systems, **and** William H. Weed, PEO Enterprise Information Systems, Medical Communications for Combat Casualty Care

Equipping and Sustaining Our Soldier Systems
Winner: North Atlantic Regional Contracting Office, U.S. Army Medical Command, Health Care Acquisition Activity

Information Enabled Army
Winner: ATEC Tactical Wheeled Vehicle Instrumentation Team, ATC

Transforming the Way We Do Business
Award Winner: Task Force Acquisition, Logistics and Technology, Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology

U.S. ARMY ACQUISITION SUPPORT CENTER NEWS RELEASE (OCT. 9, 2006)

2006 AAC AWARDS CEREMONY RECOGNIZES ACQUISITION STARS

ARLINGTON, Va.—The acquisition community held its 2006 U.S. Army Acquisition Corps (AAC) Awards Ceremony on Oct. 8, 2006, at the DoubleTree Crystal City Hotel. The event recognized the accomplishments of the acquisition workforce's most extraordinary members and the teams they lead. The ceremony's theme, "Celebrating Our Acquisition Stars," was a tribute to the uniformed and civilian professionals who work tirelessly behind the scenes to provide combatant commanders and their soldiers the weapons and equipment they need to execute decisive, full-spectrum operations as they protect our nation's precious freedom.

"We honor some of the outstanding men and women—military and civilian—of the Army Acquisition Corps and the greater Army acquisition, logistics and technology workforce," remarked Claude M. Bolton Jr., Army acquisition executive and assistant secretary of the Army for acquisition, logistics and technology (ASAALT), who hosted the event. "It is clear that we have the world's best acquisition and logistics workforce to keep our Army the most capable land force on earth."

"We serve a nation at war and a military force that is transforming while fighting and winning the global war on terrorism," Bolton observed. "It is clear that we have charted the right course—increasing capability, flexibility, and sustainability—and that we must maintain the tremendous momentum we have built."

U.S. Army Acquisition Support Center Deputy Director Col. Fred Mullins presided over the event as master of ceremonies. Current Army and retired senior leaders present included: Paul J. Hoeper, former ASAALT; Lt. Gen. Joseph L. Yakovac Jr., military deputy to the ASAALT and director, Acquisition Career Management; Lt. Gen. Steven Boutelle, Chief Information Officer, G-6; Lt. Gen. (Ret.) John S. Caldwell, former ASAALT military deputy; Tina Ballard, Deputy Assistant Secretary of the Army (DASA) for Policy and Procurement; and Dr. Thomas H. Killion, DASA for Research and Technology and the Army's Chief Scientist. Representing the DASA for Integrated Logistics Support was Larry Hill.

The evening's presentations included the Secretary of the Army Excellence in Contracting Barbara C. Heald Award; Army Life Cycle Logistician of the Year Award; Department of the Army Research and Development Laboratory of the Year Awards; the Secretary of the Army Acquisition Director, Project and Product Managers of the Year Awards; and Army Acquisition Excellence Awards.

"One thing that I would like you to always remember is that we—each and every one of us—work for the soldier" Bolton explained. "Every day, America's warfighters stand ready to make the ultimate sacrifice. They face threats that change—quite literally—overnight, and their success in meeting these challenges rests on our shoulders."

For more information about the 2006 AAC Awards Ceremony, please contact Mike Roddin at (703) 805-1035 or e-mail mike.roddin@us.army.mil.

The U.S. Army Acquisition Support Center (USAASC) supports Army warfighter readiness by developing a world-class professional acquisition workforce, effectively acquiring and stewarding resources, and providing customers with the best possible products and services. For additional information about USAASC, visit <http://asc.army.mil>.

"By equipping our forces with electronic medical recording capabilities, MC4 PMO is providing the Army a distinct advantage on the battlefield like never before … Every soldier benefits from having MC4 on the battlefield."

—Claude Bolton
Assistant Secretary of the Army
Acquisition, Logistics & Technology

MEDICAL COMMUNICATIONS FOR COMBAT CASUALTY CARE PRODUCT MANAGEMENT OFFICE (OCT. 12, 2006)

MC4'S BILL WEED RECOGNIZED WITH '06 ARMY ACQUISITION EXCELLENCE AWARD

FORT DETRICK, Md.—The Army's Medical Communications for Combat Casualty Care (MC4) Product Management Office (PMO) was awarded the 2006 DoD Chief Information Officer Team Award for outstanding achievement in DoD information management based on the spirit and intent of the Clinger-Cohen Act of 1996 (Information Technology Management Reform Act) and vision of the DoD CIO.

Assistant Secretary of the Army for Acquisition, Logistics, and Technology Claude M. Bolton Jr., commended MC4 PMO for its impact on deployed service members, deployed medical forces, and combatant commanders supporting Operations Iraqi and Enduring Freedom.

"By equipping our forces with electronic medical recording capabilities, MC4 PMO is providing the Army a distinct advantage on the battlefield like never before," Bolton said. "Every soldier benefits from having MC4 on the battlefield."

In addition to fielding 15,000 systems and training 16,000 deployed medical professionals, MC4 PMO was lauded for introducing medical recording capabilities in Afghanistan for the first time, in addition to immediately deploying to New Orleans in support of Joint Task Force Katrina relief efforts. Weed was recognized for introducing electronic post-deployment health assessment capabilities on the battlefield, in addition to opening MC4's new European Regional Technical Support Site in

Assistant Secretary of the Army for Acquisition, Logistics and Technology Claude Bolton (center) presents Bill Weed (right), Medical Communications for Combat Casualty Care Product Management Office (MC4 PMO) with the 2006 Army Acquisition Excellence Individual Award and commends Ben Pryor (left) as a finalist for the Army Life Cycle Logistician of the Year Award. Photograph courtesy MC4 PMO.

Miesau, Germany, to support units in the European Command.

"MC4's resourcefulness and flexibility have proven to be a tremendous asset in the ever-changing Army environment," said Kevin Carroll, Program Executive Officer, Enterprise Information Systems (PEO EIS). "MC4's ability to meet new and emerging needs in the combat zone has enabled the capture of 1 million electronic medical records—a number that speaks volumes on its personal and global impact."

MC4 integrates, fields, and supports a medical information management system for Army tactical medical forces, enabling a comprehensive, lifelong electronic medical record for all servicemembers, and enhancing medical situational awareness for operational commanders. Headquartered at Fort Detrick, Md., MC4 is under the oversight of the Army PEO EIS at Fort Belvoir, Va.

Media contact: Ray Steen, Public Affairs, MC4, at ray.steen@us.army.mil.

DEPARTMENT OF DEFENSE NEWS RELEASE (OCT. 26, 2006)

DOD ANNOUNCES MAINTENANCE AWARD WINNERS

The Department of Defense announced today the annual winners of the Secretary of Defense Maintenance Awards, the Phoenix, and the Robert T. Mason Trophies recognizing excellence in field and depot-level maintenance.

The field-level maintenance awards honor military maintenance organizations for outstanding performance. The awardees—two from each category of small, medium, and large organizations—are chosen from active and reserve organizations that perform unit- or field-level maintenance. One of those organizations is singled out as the best of the best and receives the Phoenix Trophy.

2006 Phoenix Award

The 2006 winner of the Phoenix Award for field level maintenance is the 3rd Materiel Readiness Battalion, III Marine Expeditionary Force (MEF). Based in Okinawa, this battalion serves the entire III MEF. In fiscal year 2005, III MEF units deployed in support of Operation Iraqi Freedom, Operation Enduring Freedom, and various training exercises and humanitarian relief efforts. Despite supporting so many diverse missions, the battalion completed more than 13,500 intermediate repair orders in an average repair cycle time of 27.8 days, resulting in III MEF having an overall ground combat equipment readiness of greater than 95 percent.

Secretary of Defense Maintenance Awards

The other field-level maintenance organizations receiving Secretary of Defense Maintenance Awards are: Helicopter Anti-submarine Squadron Light 47, Helicopter Maritime Strike Wing for the Navy and 303rd Intelligence Squadron, Air Combat Command for the Air Force in the small category; the 297th Transportation Company, 2nd Chemical Battalion for the Army, and the 437th Maintenance Squadron/315th Maintenance Squadron (Reserve), Air Mobility Command for the Air Force in the medium category; and 3rd Maintenance Group, 3rd Wing for the Air Force in the large category.

Robert T. Mason Trophy

The Secretary of Defense Maintenance Award for depot-level maintenance, the Robert T. Mason Trophy, is presented to the major organic depot-level maintenance fa-

cility that exemplifies responsive and effective depot-level support to DoD operating units. It is named after a former assistant deputy secretary of defense for maintenance policy, programs, and resources, who served as a champion for excellence in organic depot maintenance operations.

The 2006 winner of the Robert T. Mason Trophy is the High Mobility Multipurpose Wheeled Vehicle Recapitalization Program at Red River Army Depot, Texas. Through this program, the Red River Army Depot restored nearly 2,800 primarily battle-damaged HMMWVs, exceeding planned output by 33 percent, while reducing average defects by 46 percent, shortening repair cycle time by 45 percent and lowering the average cost by 42 percent. Its workload for fiscal year 2006 consisted of 3,500 HMMWVs, a 26 percent increase over the year before.

These awards were presented Oct. 25 at the 2006 DoD Maintenance Symposium and Exhibition in Reno, Nev.

AERONAUTICAL SYSTEMS CENTER OFFICE OF PUBLIC AFFAIRS (OCT. 27, 2006)

DOD SELECTS AIR FORCE CIVILIAN FOR DISABLED EMPLOYEE AWARD

Estella Holmes

WRIGHT-PATTERSON AIR FORCE BASE, Ohio —The beginning of the award reads, "outstanding DoD employee," defining a career marked by a strong work ethic and many achievements before mentioning the life-threatening injury that changed his world 11 years ago.

Paul Gabriel, an electronics engineer at Aeronautical Systems Center's Engineering Directorate, will accept the 2006 Employees with Disabilities Award during a special ceremony in Washington, D.C., in December. Gabriel was selected for the DoD award after having been similarly honored at the Air Force and Air Force Materiel Command level.

"Paul has contributed a tremendous amount of technical ability and hard work, with increased positive progress and results for the Joint Strike Fighter team," said Air Force Col. James Godsey, deputy director of engineering at ASC.

But the challenge of working on one of the Air Force's newest weapon systems does not compare to the challenge that Gabriel faced in 1995 when, while on his way to a class to complete his master of science degree in mechanical engineering, an automobile accident left him a quadriplegic with little feeling below the neck. His attention was suddenly diverted from graduate school to two-and one-half years of intensive physical therapy.

Still, as Godsey said, "Paul has never let his disability get in the way of his dedication and talent."

After the accident, Gabriel had to focus on learning how to do day-to-day tasks, but his desire to get his master's degree remained. "I felt the need to finish what I started," Gabriel said. He had to reinvent how to communicate in a time before voice-recognition computer software. One challenge was how to dictate mathematical equations involving complex expressions and Greek letters to non-technical helpers. He did his school work by patiently describing what to write and type to his wife and nurse. Gabriel continued school and completed his degree in May 2002, attending his graduation in his wheelchair.

When asked what is most challenging for him since his spinal cord injury, Gabriel said, "Everything. Putting one foot in front of the other is rather difficult, but the most difficult thing is learning that I have a limited amount of energy. Before the accident I could plug away at a task for hours. Now, I must measure my efforts, as I tire easily." Constant neuropathic pain in his non-functioning limbs also makes it impossible to concentrate enough to work at times.

Upon preparing to return to work, special effort was made to find the right job fit for Gabriel "based on his particular talents and special needs" according to Ann Kreider, his supervisor in the engineering directorate.

As a weapon system integrity engineer, Gabriel's talents were aligned with the task of designing an integrity program for the JSF.

"Doing the work is not a problem," Gabriel says. "My disability is a minor inconvenience, which I have retrained myself to work around.

He often works from home using telecommuting capabilities. A special telephone and voice-activated computer were provided. From this venue, he is able to analyze systems for the JSF, making sure reliability, integrity, maintainability, and durability are designed into the system up front when changes are cheaper and more efficient. Changes made at a later time might result in extensive retesting and modifications.

WRIGHT-PATTERSON AIR FORCE BASE, Ohio — Paul Gabriel, an electronics engineer at Aeronautical Systems Center's Engineering Directorate, will accept the 2006 Employees with Disabilities Award during a special ceremony in Washington, D.C., in December.
Photograph courtesy Aeronautical Systems Center Public Affairs.

Gabriel works closely with his contract partners at Lockheed Martin Aeronautical Systems Co., Ft. Worth, Texas. Winning the award comes after years of accolades from fellow professionals at the plant.

"We are fortunate and honored to work with a technical expert of Paul Gabriel's caliber", said Paul Watson, Vehicle Systems Integrity, JSF Program. Colleague Mitchell Ratzloff added, "Paul Gabriel's contributions to the JSF Program have been tremendous. I am proud to have him as a peer and colleague."

Holmes is with Aeronautical Systems Center Office of Public Affairs.

Department of Defense News Release

Department of Defense Civilian Awards Presentations Announced

On Nov. 9, Deputy Secretary of Defense Gordon England presented two categories of distinguished civilian awards, the 51st annual DoD Distinguished Civilian Service Awards, and the 2nd annual DoD David O. Cooke Excellence in Public Administration Award. The Pentagon ceremony was hosted by the Director, Administration and Management Michael B. Donley.

The DoD David O. Cooke Excellence in Public Administration Award recognizes a DoD employee with from three to 10 years of federal service and occupies a nonmanagerial DoD position who exhibits great potential as a federal executive. This employee must emulate Cooke's dedication to service and spirit of cooperation and improvement in the department. The recipient of this year's award was Lorena Castro, project engineer, Program Executive Office (Ships), Department of the Navy. Castro was responsible for the development of the acquisition and contracting strategy for procuring three research ships for the National Science Foundation.

The DoD Distinguished Civilian Service Award is the highest DoD-level award that a career civil servant can earn. It recognizes career employees for exceptional contributions to the DoD. The following received this award:

Gus Guissanie, deputy director, Information Assurance, OSD/Networks and Information Integration/Chief Information Officer; Thomas Harvey, principal director, Stability Operations, OSD/Policy; Gail McGinn, deputy under secretary of defense for Plans, OSD/Personnel and Readiness; Maurice M. Mizrahi, operations research analyst, OSD/Program Analysis and Evaluation; Victor Ferlise, deputy to the commanding general for operations and support, Department of the Army; Charles Gallaher, director, Joint Warfare Applications Department, Department of the Navy; Bhakta Rath, associate director of research, Naval Research Laboratory, Department of the Navy; and Lawrence Fielding, technical director, Aeronautical Systems Center, Department of the Air Force.

AT&L Workforce—Key Leadership Changes

DEPARTMENT OF DEFENSE NEWS RELEASE (SEPT. 13, 2006)

GENERAL OFFICER ANNOUNCEMENT

Secretary of Defense Donald H. Rumsfeld announced that the president has nominated:

Lt. Gen. Robert Wilson, U.S. Army, for assignment as assistant chief of staff for installation management/commanding general, Installation Management Command, U.S. Army, Washington, D.C. He is currently serving as assistant chief of staff for installation management, U.S. Army, Washington, DC.

NAVY NEWSSTAND (SEPT. 15, 2006)

FLAG OFFICER ANNOUNCEMENT

WASHINGTON—Secretary of Defense Donald H. Rumsfeld announced Sept. 14 that the president has made the following nomination:

Rear Adm. Michael K. Loose for appointment to the grade of vice admiral and assignment as deputy chief of naval operations for fleet readiness and logistics, N4, Office of the Chief of Naval Operations, Pentagon, Washington, D.C. Loose is currently serving as commander, Naval Facilities Engineering Command/Chief of Civil Engineers, Washington, D.C.

DEPARTMENT OF DEFENSE NEWS RELEASE (SEPT. 18, 2006)

FLAG OFFICER ASSIGNMENTS

Chief of Naval Operations Adm. Mike Mullen announced the following flag officer assignments:

Rear Adm. (selectee) Peter J. Williams is being assigned as program executive officer for tactical aircraft programs, Patuxent River, Md. Williams is currently serving as assistant commander for logistics, Air-3.0, Naval Air Systems Command, Patuxent River, Md.

Rear Adm. (lower half) William E. Shannon III is being assigned as assistant commander for logistics, Air-3.0, Naval Air Systems Command, Patuxent River, Md. Shannon is currently serving as assistant commander for acquisition and operations, Air-1.0, Naval Air Systems Command, Patuxent River, Md.

DEPARTMENT OF DEFENSE NEWS RELEASE (SEPT. 21, 2006)

GENERAL OFFICER ASSIGNMENTS

Brig. Gen. Marvin K. McNamara, deputy director, Missile Defense Agency, Washington, D.C., to director, joint and futures, Office of the Deputy Chief of Staff, G-8, Army, Washington, D.C.

Brig. Gen. Patrick J. O'Reilly, program director, ground-based midcourse defense, Missile Defense Agency, Huntsville, Ala., to deputy director, Missile Defense Agency, Washington, D.C.

HAGGERTY NAMED HEAD OF DOD'S INTERNATIONAL TECHNOLOGY SECURITY

Director, Defense Research and Engineering John Young announces the appointment of Alan E. Haggerty as the Deputy Under Secretary of Defense for International Technology Security, Office of the Under Secretary of Defense (Acquisition, Technology and Logistics), effective Sept. 1, 2006. Haggerty is a former acquisition program manager in the U.S. Navy, and comes to DoD from Information Systems Laboratories in San Diego.

DENETT SWORN IN AS ADMINISTRATOR, OFFICE OF FEDERAL PROCUREMENT POLICY

On Sept. 28, 2006, Paul Denett was sworn in as the new administrator for the Office of Federal Procurement Policy by Rob Portman, director, Office of Management and Budget. The U.S. Senate unanimously confirmed the nomination of Paul A. Denett to be administrator on Aug. 4, 2006.

Denett most recently served as counselor to OMB's deputy director for management since June 2006. He joined OMB after serving from 2003 to 2006 as ESI International's vice president for contracting programs, supporting contract and acquisition training in both the government and commercial world. From 2001 to 2002, he was program director for the Logistics Management Institute (LMI) and focused on the strategic improvement of government acquisition and grant management issues.

Denett is a retired senior executive from the federal service, and has served as director of administration and senior procurement executive in the Office of the Secretary for the Department of the Interior , and as vice chairman of the government-wide Procurement Executives Council, now called the Federal Acquisition Council.

Denett has received many prestigious awards during his federal government career including a Presidential Rank Award; he has a master's degree with emphasis in acquisition from The George Washington University.

About the Office of Federal Procurement Policy

The federal government spends approximately $350 billion annually for a wide range of goods and services to meet mission needs. The Office of Federal Procurement Policy (OFPP) in the Office of Management and Budget plays a central role in shaping the policies and practices federal agencies use to acquire the goods and services they need to carry out their responsibilities. OFPP was established by Congress in 1974 to provide overall direction for government-wide procurement policies, regulations, and procedures and to promote economy, efficiency, and effectiveness in acquisition processes. OFPP is headed by an administrator who is appointed by the President and confirmed by the Senate.

Through a variety of statutory authorities and results-oriented policy initiatives, OFPP seeks to ensure the federal acquisition system provides the best value to the taxpayer. Current priorities are designed to provide for a better skilled and more agile workforce, consistent and effective use of competition, contract vehicles that reflect the government's buying power, and a data system that gives federal managers the information they need to evaluate results and plan effectively for the future.

DEPARTMENT OF DEFENSE NEWS RELEASE (OCT. 6, 2006)

FLAG OFFICER ASSIGNMENT

Chief of Naval Operations Adm. Mike Mullen announced the following flag officer assignment:

Rear Adm. Alan S. Thompson is being assigned as commander, Naval Supply Systems Command/chief of Supply Corps, Mechanicsburg, Pa. Thompson is currently serving as director, Supply Ordnance and Logistics Operations Division, N41, Office of the Chief of Naval Operations, Washington, D.C.

Paul Denett (left) is sworn in as administrator for the Office of Federal Procurement Policy by Rob Portman, director, Office of Management and Budget. Pictured from left: Denett; Clay Johnson III, deputy director for management; wife, Lucy; sons, Michael and Scott; mother, Irene; and Portman.
Photograph courtesy Office of Federal Procurement Policy.

TUCKER NAMED ONE OF FEDERAL GOVERNMENT'S "RISING STARS"

Stephen Larsen

WASHINGTON—Kyle Tucker, a project leader with the Project Manager Defense Communications and Army Transmission Systems (PM DCATS) Product Manager, Defense Wide Transmission Systems (PM DWTS) at Ft. Monmouth, N.J., was honored as one of only 53 "Rising Stars" in the entire federal government for 2006 by *Federal Computer Week* magazine during an awards banquet at the JW Marriott hotel on Oct. 12, 2006.

Christopher Dorobek, editor in chief of *Federal Computer Week*, presented the award to Tucker and the other Rising Stars before an audience of more than 300 people from the federal information technology community.

Dorobek explained that the awards were created by *Federal Computer Week* and the Young AFCEANs—a chapter of the Armed Forces Communications and Electronics Association (AFCEA) International for members under 40, located in Bethesda, Md.—as a way to recognize the work done by exceptional younger people in the federal IT community who might otherwise go unrecognized.

Kyle Tucker (second from right) helps contractors conduct a site survey at Taji, Iraq, for the Central Iraq Microwave System as a soldier (left) provides security. Photograph by Sgt. 1st Class Arthur Lee, USA

Tucker, who started his federal career in 1998 at Ft. Lee, Va., as a Department of the Army logistics management intern, was honored for his work in providing strategic/enterprise transmission systems for warfighters in Iraq, Kuwait, and Afghanistan. He has deployed to war zones multiple times, interacting with his customers and implementing projects, where he has faced indirect fire from mortars and rockets on a daily basis and has occasionally faced direct fire from automatic weapons, as well as danger from improvised explosive devices and land mines.

From 2005 to 2006, Tucker managed 27 IT projects in Afghanistan for PM DWTS, including cleaning up cabling and providing raised flooring for a Joint Operations Center in Kabul; providing an intercom system at the Bagram Tertiary Internment Center; and conducting site surveys to provide NIPRnet, SIPRnet, and CENTRIXS (a coalition secret data network) capabilities at a variety of locations. He is also currently planning to redeploy to Iraq and Kuwait to support the Coalition Land Forces Component Command to identify their upcoming strategic IT requirements.

Tucker earned an associate's degree in paramedicine from the College of Health Sciences, Roanoke, Va., in 1993, a bachelor's degree in emergency management systems from Hampton University, Hampton, Va., in 1996, and a master's degree in business management from the Florida Institute of Technology, Melbourne, Fla., in 2002.

DEPSECDEF DESIGNATES PRINCIPAL STAFF ASSISTANT FOR BIOMETRICS

Deputy Defense Secretary Gordon England has directed the creation of a new Pentagon post to oversee the U.S. military's biometric programs and better coordinate the development and fielding of technologies used to identify both friendly forces and adversaries using fingerprints, DNA samples, palm prints, voice sounds, and iris patterns. In an Oct. 4 memorandum, England designated the Director, Defense Research and Engineering (DDR&E) as the Principal Staff Assistant (PSA) for Biometrics. As the PSA for Biometrics, the DDR&E will have responsibility for the authority, direction, and control of DoD biometrics programs, initiatives, and technologies. The memorandum also directs the DDR&E to establish the position of Director for Defense Biometrics.

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Acquisition & Logistics Excellence

An Internet Listing Tailored to the Professional Acquisition Workforce

Surfing the Net

Acquisition Central
http://acquisition.gov/
Shared systems and tools to help the federal acquisition community and the government's business partners conduct business efficiently.

Acquisition Community Connection (ACC)
http://acc.dau.mil
Policies, procedures, tools, references, publications, Web links, and lessons learned for risk management, contracting, system engineering, total ownership cost.

Advanced Concept Technology Demonstrations (ACTDs)
www.acq.osd.mil/actd/
ACTD's accomplishments, articles, speeches, guidelines, and POCs.

Aging Systems Sustainment and Enabling Technologies (ASSET)
http://asset.okstate.edu/asset/index.htm
A government-academic-industry partnership. ASSET program-developed technologies and processes increase the DoD supply base, reduce time and cost associated with parts procurement, and enhance military readiness.

Air Force (Acquisition)
www.safaq.hq.af.mil/
Policy; career development and training opportunities; reducing TOC; library; links.

Air Force Materiel Command (AFMC) Contracting Laboratory's FAR Site
http://farsite.hill.af.mil/
FAR search tool; Commerce Business Daily announcements (CBDNet); Federal Register; electronic forms library.

Army Acquisition Support Center
http://asc.army.mil
News; policy; *Army AL&T* Magazine; programs; career information; events; training opportunities.

Assistant Secretary of the Army (Acquisition, Logistics & Technology)
https://webportal.saalt.army.mil/
ACAT Listing; ASA(ALT) Bulletin; digital documents library; ASA(ALT) organization; links to other Army acquisition sites.

Association for the Advancement of Cost Engineering International (AACE)
www.aacei.org
Promotes planning and management of cost and schedules; online technical library; bookstore; technical development; distance learning; etc.

Association of Old Crows (AOC)
www.crows.org
News; conventions, courses; *Journal of Electronic Defense.*

Association of Procurement Technical Assistance Centers (APTAC)
www.aptac-us.org
PTACs nationwide assist businesses with government contracting issues.

Committee for Purchase from People Who are Blind or Severely Disabled
www.jwod.gov
Information and guidance to federal customers on the requirements of the Javits-Wagner-O'Day (JWOD) Act.

Defense Acquisition University (DAU)
www.dau.mil
DAU Course Catalog; *Defense AT&L* magazine and *Defense Acquisition Review Journal*; course schedule; policy documents; guidebooks; training and education news for the AT&L workforce.

DAU Alumni Association
www.dauaa.org
Acquisition tools and resources; government and related links; career opportunities; member forums.

DAU Distance Learning Courses
www.dau.mil/registrar/enroll.asp
DAU online courses.

Defense Advanced Research Projects Agency (DARPA)
www.darpa.mil
News releases; current solicitations; "Doing Business with DARPA."

Defense Electronic Business Program Office (DEBPO)
www.acq.osd.mil/scst/index.htm
Policy; newsletters; Central Contractor Registration (CCR); assistance centers; DoD EC partners.

Defense Information Systems Agency (DISA)
www.disa.mil
Structure and mission of DISA; Defense Information System Network; Defense Message System; Global Command and Control System.

Defense Modeling and Simulation Office (DMSO)
www.dmso.mil
DoD Modeling and Simulation Master Plan; document library; events; services.

Defense Systems Management College (DSMC)
www.dau.mil
DSMC educational products and services; course schedules; job opportunities.

Defense Technical Information Center (DTIC)
www.dtic.mil/
DTIC's scientific and technical information network (STINET) is one of DoD's largest available repositories of scientific, research, and engineering information. Hosts over 100 DoD Web sites.

Director, Defense Procurement and Acquisition Policy (DPAP)
www.acq.osd.mil/dpap
Procurement and acquisition policy news and events; reference library; DPAP organizational breakout; acquisition education and training policy, guidance.

DoD Defense Standardization Program
www.dsp.dla.mil
DoD standardization; points of contact; FAQs; military specifications and standards reform; newsletters; training; nongovernment standards; links.

DoD Enterprise Software Initiative (ESI)
www.esi.mil
Joint project to implement true software enterprise management process within DoD.

DoD Inspector General Publications
www.dodig.osd.mil/pubs/
Audit and evaluation reports; IG testimony; planned and ongoing audit projects of interest to the AT&L community.

DoD Office of Technology Transition
www.acq.osd.mil/ott/
Information about and links to OTT's programs.

DoD Systems Engineering
www.acq.osd.mil/ds/se
IPolicies, guides and other information on SE and related topics, including developmental T&E and acquisition program support.

Earned Value Management
www.acq.osd.mil/pm
Implementation of earned value management; latest policy changes; standards; international developments.

Electronic Industries Alliance (EIA)
www.eia.org
Government relations department; links to issues councils; market research assistance.

Federal Acquisition Institute (FAI)
www.faionline.com
Virtual campus for learning opportunities; information access and performance support.

Federal Acquisition Jump Station
http://prod.nais.nasa.gov/pub/fedproc/home.html
Procurement and acquisition servers by contracting activity; CBDNet; reference library.

Federal Aviation Administration (FAA)
www.asu.faa.gov
Online policy and guidance for all aspects of the acquisition process.

Federal Business Opportunities
www.fedbizopps.gov/
FedBizOpps.gov is the single government point-of-entry for federal government procurement opportunities over $25,000.

Federal R&D Project Summaries
www.osti.gov/fedrnd/about
Portal to information on federal research projects; search databases at different agencies.

Federal Research in Progress (FEDRIP)
http://grc.ntis.gov/fedrip.htm
Information on federally funded projects in the physical sciences, engineering, life sciences.

Fedworld Information
www.fedworld.gov
Comprehensive central access point for searching, locating, ordering, and acquiring government and business information.

Government Accountability Office (GAO)
www.gao.gov
GAO reports;policy and guidance; FAQs.

General Services Administration (GSA)
www.gsa.gov
Online shopping for commercial items to support government interests.

Government-Industry Data Exchange Program (GIDEP)
www.gidep.org/
Federally funded co-op of government-industry participants, providing electronic forum to exchange technical information essential to research, design, development, production, and operational phases of the life cycle of systems, facilities, and equipment.

GOV.Research_Center
http://grc.ntis.gov
U.S. Dept. of Commerce, National Technical Information Service (NTIS), and National Information Services Corporation (NISC) joint venture single-point access to government information.

Integrated Dual-Use Commercial Companies (IDCC)
www.idcc.org
Information for technology-rich commercial companies on doing business with the federal government.

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Surfing the Net

International Society of Logistics
www.sole.org
Online desk references that link to logistics problem-solving advice; Certified Professional Logistician certification.

International Test & Evaluation Association (ITEA)
www.itea.org
Professional association to further development and application of T&E policy and techniques to assess effectiveness, reliability, and safety of new and existing systems and products.

U.S. Joint Forces Command
www.jfcom.mil
A "transformation laboratory" that develops and tests future concepts for warfighting.

Joint Fires Integration and Interoperability Team
https://jfiit.eglin.af.mil
USJFCOM lead agency to investigate, assess, and improve integration, interoperability, and operational effectiveness of Joint Fires and Combat Identification across the Joint warfighting spectrum. (Accessible from .gov and .mil domains only.)

Joint Interoperability Test Command (JITC)
http://jitc.fhu.disa.mil
Policies and procedures for interoperability certification; lessons learned; support.

Joint Spectrum Center (JSC)
www.jsc.mil
Provides operational spectrum management support to the Joint Staff and COCOMs and conducts R&D into spectrum-efficient technologies.

Library of Congress
www.loc.gov
Research services; Congress at Work; Copyright Office; FAQs.

MANPRINT (Manpower and Personnel Integration)
www.manprint.army.mil
Points of contact for program managers; relevant regulations; policy letters from the Army Acquisition Executive; briefings on the MANPRINT program.

National Aeronautics and Space Administration (NASA)'s Commercial Technology Office (CTO)
http://technology.grc.nasa.gov
Promotes competitiveness of U.S. industry through commercial use of NASA technologies and expertise.

National Contract Management Association (NCMA)
www.ncmahq.org
"What's New in Contracting?"; educational products catalog; career center.

National Defense Industrial Association (NDIA)
www.ndia.org
Association news; events; government policy; National Defense magazine.

National Geospatial-Intelligence Agency
www.nima.mil
Imagery; maps and geodata; Freedom of Information Act resources; publications.

National Institute of Standards and Technology (NIST)
www.nist.gov
Information about NIST technology, measurements, and standards programs, products, and services.

National Technical Information Service (NTIS)
www.ntis.gov/
Online service for purchasing technical reports, computer products, videotapes, audiocassettes.

Naval Sea Systems Command
www.navsea.navy.mil
Total Ownership Cost (TOC); documentation and policy; reduction plan; implementation timeline; TOC reporting templates; FAQs.

Navy Acquisition and Business Management
www.abm.rda.hq.navy.mil
Policy documents; training opportunities; guides on risk management, acquisition environmental issues, past performance; news and assistance for the Standardized Procurement System (SPS) community; notices of upcoming events.

Navy Acquisition, Research and Development Information Center
www.onr.navy.mil/sci_tech
News and announcements; acronyms; publications and regulations; technical reports; doing business with the Navy.

Navy Best Manufacturing Practices Center of Excellence
www.bmpcoe.org
National resource to identify and share best manufacturing and business practices in use throughout industry, government, academia.

Naval Air Systems Command (NAVAIR)
www.navair.navy.mil
Provides advanced warfare technology through the efforts of a seamless, integrated, worldwide network of aviation technology experts.

Office of Force Transformation
www.oft.osd.mil
News on transformation policies, programs, and projects throughout the DoD and the Services.

Open Systems Joint Task Force
www.acq.osd.mil/osjtf
Open Systems education and training opportunities; studies and assessments; projects, initiatives and plans; reference library.

Parts Standardization and Management Committee (PSMC)
www.dscc.dla.mil/psmc
Collaborative effort between government and industry for parts management and standardization through commonality of parts and processes.

Performance-based Logistics Toolkit
https://acc.dau.mil/pbltoolkit
Web-based 12-step process model for development, implementation, and management of PBL strategies.

Project Management Institute
www.pmi.org
Program management publications; information resources; professional practices; career certification.

Small Business Administration (SBA)
www.sbaonline.sba.gov
Communications network for small businesses.

DoD Office of Small and Disadvantaged Business Utilization
www.acq.osd.mil/sadbu
Program and process information; current solicitations; Help Desk information.

Software Program Managers Network
www.spmn.com
Supports project managers, software practitioners, and government contractors. Contains publications on highly effective software development best practices.

Space and Naval Warfare Systems Command (SPAWAR)
https://e-commerce.spawar.navy.mil
SPAWAR business opportunities; acquisition news; solicitations; small business information.

System of Systems Engineering Center of Excellence (SoSECE)
www.sosece.org
Advances the development, evolution, practice, and application of the system of systems engineering discipline across individual and enterprise-wide systems.

Under Secretary of Defense (Acquisition, Technology and Logistics) (USD[AT&L])
www.acq.osd.mil/
USD(AT&L) documents; streaming videos; links.

USD(AT&L) Knowledge Sharing System (formerly Defense Acquisition Deskbook)
http://akss.dau.mil
Automated acquisition reference tool covering mandatory and discretionary practices.

U.S. Coast Guard
www.uscg.mil
News and current events; services; points of contact; FAQs.

U.S. Department of Transportation MARITIME Administration
www.marad.dot.gov/
Information and guidance on the requirements for shipping cargo on U.S. flag vessels.

Links current at press time. To add a non-commercial defense acquisition/acquisition and logistics-related Web site to this list, or to update your current listing, please fax your request to *Defense AT&L*, (703) 805-2917 or e-mail defenseatl@dau.mil. DAU encourages the reciprocal linking of its home page to other interested agencies. Contact: webmaster@dau.mil.

Defense AT&L Writer's Guidelines in Brief

Purpose

The purpose of *Defense AT&L* magazine is to instruct members of the DoD acquisition, technology & logistics (AT&L) workforce and defense industry on policies, trends, legislation, senior leadership changes, events, and current thinking affecting program management and defense systems acquisition, and to disseminate other information pertinent to the professional development and education of the DoD Acquisition Workforce.

Subject Matter

We do print feature stories that include real people and events. Stories that appeal to our readers—who are senior military personnel, civilians, and defense industry professionals in the program management/acquisition business—are those taken from real-world experiences vs. pages of researched information. **We don't print** academic papers, fact sheets, technical papers, or white papers. We don't use endnotes or references in our articles. Manuscripts meeting these criteria are more suited for DAU's journal, *Defense Acquisition Review*.

Defense AT&L reserves the right to edit manuscripts for clarity, style, and length. Edited copy is cleared with the author before publication.

Length

Articles should be 1,500 – 2,500 words. Significantly longer articles: please query first by sending an abstract and a word count for the finished article.

Author bio

Include a brief biographical sketch of the author(s)—about 25 words—including current position and educational background. We do not use author photographs.

Style

Good writing sounds like comfortable conversation. Write naturally; avoid stiltedness and heavy use of passive voice. Except for a rare change of pace, most sentences should be 25 words or less, and paragraphs should be six sentences. Avoid excessive use of capital letters and acronyms. Define *all* acronyms used. Consult "Tips for Authors" at <http://www.dau.mil/pubs/damtoc.asp>. Click on "Submit an Article to *Defense AT&L*."

Presentation

Manuscripts should be submitted as Microsoft Word files. Please use Times Roman or Courier 11 or 12 point. Double space your manuscript and do not use columns or any formatting other than bold, italics, and bullets. *Do not embed or import graphics into the document file*; they must be sent as separate files (see next section).

Graphics

We use figures, charts, and photographs (black and white or color). Photocopies of photographs are not acceptable. Include brief numbered captions keyed to the figures and photographs. Include the source of the photograph. We publish no photographs or graphics from outside the DoD without written permission from the copyright owner. We do not guarantee the return of original photographs.

Digital files may be sent as e-mail attachments or mailed on zip disk(s) or CD. *Each figure or chart must be saved as a separate file* in the original software format in which it was created and must meet the following publication standards: JPEG or TIF files sized to print no smaller than 3 x 5 inches at a minimum resolution of 300 pixels per inch; PowerPoint slides; EPS files generated from Illustrator (preferred) or Corel Draw. For other formats, provide program format as well as EPS file. Questions on graphics? Call (703) 805-4287, DSN 655-4287 or e-mail defenseatl@dau.mil. Subject line: *Defense AT&L graphics*.

Clearance and Copyright Release

All articles written by authors employed by or on contract with the U.S. government must be cleared by the author's public affairs or security office prior to submission.

Authors must certify that the article is a work of the U.S. government. Go to <http://www.dau.mil/pubs/damtoc.asp>. Click on "Certification as a Work of the U.S. Government" to download the form (PDF). Print, fill out in full, sign, and date the form. Submit the form with your article or fax it to (703) 805-2917, ATTN: *Defense AT&L*. *Articles will not be reviewed without the copyright form*. Articles printed in *Defense AT&L* are in the public domain and posted to the DAU Web site. In keeping with DAU's policy of widest dissemination of its published products, we accept no copyrighted articles. We do not accept reprints.

Submission Dates

Issue	**Author's Deadline**
January-February	1 October
March-April	1 December
May-June	1 February
July-August	1 April
September-October	1 June
November-December	1 August

If the magazine fills before the author deadline, submissions are considered for the following issue.

Submission Procedures

Submit articles by e-mail to defenseatl@dau.mil or on disk to: DAU Press, ATTN: Judith Greig, 9820 Belvoir Rd., Suite 3, Fort Belvoir VA 22060-5565. Submissions must include the author's name, mailing address, office phone number (DSN and commercial), e-mail address, and fax number.

Receipt of your submission will be acknowledged in five working days. You will be notified of our publication decision in two to three weeks.


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