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March-April 1998

PROGRAM MANAGER

Risk Management

Commercial Practices

Why Commercial Contractors File Protests

"We Want Our DSMC Customers' Input & Expectations"



Continuing Education



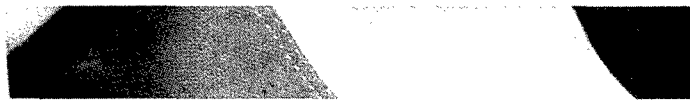
Distance Learning



Best Value Contracting Techniques



Partnering with Industry



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NAVY REAR ADM. LEONARD "LENN" VINCENT
14th Commandant, Defense Systems Management College

PROGRAM MANAGER

Vol XXVII, No. 2, DSMC 143

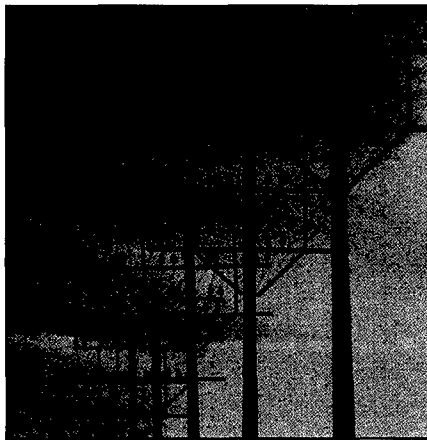


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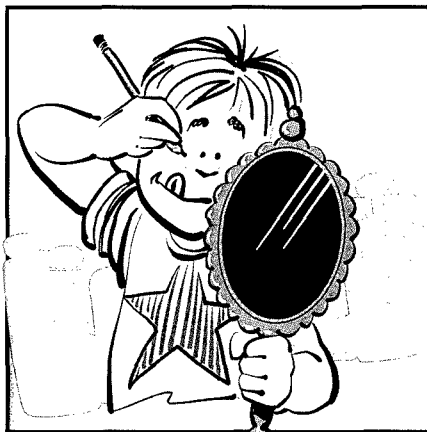


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Why DoD Contractors File Protests...and Why Some Don't

Steve Roerman

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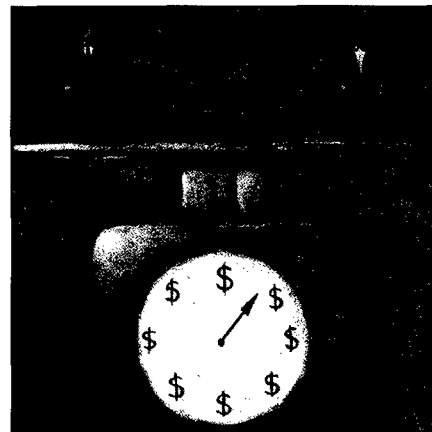


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Cover: Navy Rear Adm. Leonard "Lenn" Vincent speaks to *Program Manager* from his office at the Defense Systems Management College, Fort Belvoir, Va. Vincent became the College's 14th Commandant effective Dec. 30, 1997.

Some photos appearing in this publication may be digitally enhanced.

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• Navy Professor Helps Air Force Contingency Planning • Joint Electronic Commerce Program Office Announced • Reform Initiative Changes Announced • President Nominates Generals for Second Star • Additional FY98 Advanced Concept Technology Demonstrations Announced • President Clinton Names David R. Oliver, Jr., As Principal Deputy Under Secretary of Defense for Acquisition and Technology

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Correction

Please note that the dates for the next PEO/SysCom Commanders/PM Conference have changed since publication of our November-December 1997 *Program Manager*. The Seventh Semiannual PEO/SysCom Commanders/PM Conference will now be held at the Defense Systems Management College, Fort Belvoir, Va., April 14-15, 1998.

Program Manager Interviews DSMC's New Commandant — Navy Rear Adm. "Lenn" Vincent

From Hawaii to Northern Virginia — A Tough Transition, and a Tough Job Ahead

After two-and-a-half years in Pearl Harbor, Hawaii, as Deputy Chief of Staff for Logistics, Fleet Supply and Ordnance, U.S. Pacific Fleet, Navy Rear Adm. "Lenn" Vincent was offered the position of Commandant, Defense Systems Management College (DSMC). The decision to leave his job, the Hawaiian Islands, and the Hawaiian people he loved for an assignment in Northern Virginia in the dead of winter, could not have been an easy one.

On Dec. 30, 1997, however, he became not only the College's 14th Commandant, but also the first Navy Supply Corps officer to hold the position of Commandant within a Defense Acquisition University (DAU) consortium school.

A tall, soft-spoken "Okie" from McAlester, whose grandmother was half Cherokee, Vincent is quick with a smile and handshake, and radiates a style of make-yourself-at-home, easygoing affability that makes him easy to talk to and interview.

Unlike most military officers within DoD who deliberately pursue a commission, Vincent had no grand design to build a career as a military officer (much less, as a military flag officer). His original plan was to finish college, serve his two-year obligation in the Navy as an enlisted man, and then pursue his career ambition to be a history teacher and coach.

Collie J. Johnson, Managing Editor, Program Manager Magazine, conducted the interview with Vincent on behalf of the DSMC Press.



VINCENT IS A CAREER ACQUISITION OFFICER WHO HONED HIS ACQUISITION SKILLS, FOR THE MOST PART, IN KEY CONTRACTING AND CONTRACT MANAGEMENT ASSIGNMENTS, INCLUDING COMMANDER OF THE DEFENSE CONTRACT MANAGEMENT COMMAND AND ASSISTANT COMMANDER FOR CONTRACTS, NAVAIR SYSTEMS COMMAND.

However, the casual advice offered by a "station keeper" to apply for Officer Candidate School versus merely serving his two-year obligation, changed his future in a way he could never have contemplated at the time.

Eventually, that advice took him from the small town of McAlester, Okla., to the select minority of Navy officers who ultimately attain the rank of Admiral.

A man who chooses his words carefully, Vincent is a career acquisition officer who honed his acquisition skills, for the

most part, in key contracting and contract management assignments, including Commander of the Defense Contract Management Command and Assistant Commander for Contracts, NAVAIR Systems Command.

He expresses optimism and enthusiasm for the future of the College and DAU, and is confident that DSMC will meet the challenges of acquisition reform.

In this interview, distance learning and continuing education surface as two of his major priorities — topics you will

undoubtedly read more about in future issues of *Program Manager*.

Program Manager: *Would you tell our readers a little of your background and the types of jobs and experiences that led to your selection as Commandant of DSMC.*

Vincent: I came in the Navy Reserve in 1961. I was facing the draft at the time, so I thought the Navy was probably the better choice. My original intent was to go into the Navy and do two years obligated service. As it turned out, I got married in the meantime and decided to finish college (I had completed two years of education before that). So, after getting a deferment from active duty, I did get a degree. As a matter of fact, my intent was to teach high school and coach football.

But I still had my obligation to do. So one of what we called "station keepers" (a member of the reserve unit in charge of administering records) actually really pushed me into trying to become an officer candidate versus going in as an enlisted man. "You know, you're going to get a college degree. Don't you think you ought to do this rather than do that?" Apparently, thank goodness, he must have seen something in me that prompted him to advise me to become an officer candidate.

He had a hard sell because I didn't really want to do that. I wanted to just serve two years versus three years. But once he sat down and showed me the various benefits of staying an extra year, it didn't take too much convincing.

I eventually agreed to take an officer battery test, which is the first thing you have to do. But I must say I was a reluctant player. I finally said, "Okay, I'll take the test; you want me to do this, so I'll do it."

So I drove to Oklahoma City and took the test half-heartedly, and when I finished, I was sure that I didn't pass it. I gave it to the lieutenant that administered it and said, "You know, I don't think I did very well."

He said, "Hey, go get a sandwich, come back, and we'll have it graded."

I did that, came back, and he said, "Hey, that's good. Congratulations. Sign here and we'll send you to Officer Candidate School." That's exactly the way it was.

So I went to Officer Candidate School thinking, "Well, if it's too hard, I'll just get out and do the two-year enlistment as I originally planned." But when you get there, whatever it is inside you that won't let you fail, makes you stay there. I didn't like everything that was happening to me, but I wouldn't quit.

When I got my commission in July of 1965, I went to the Navy Supply Course School in Athens, Ga., to get the basic supply corps education and training, still thinking that all I wanted was to do my three years, then get out and go into education.

And as a matter of fact, I did get out after my first tour, went back to my hometown, talked to various members of the school board — high school principal, superintendent — and had a contract offered me. But I let it set on a table for about a week before I declined their offer. Somehow, it really just didn't feel right. I must have known in my heart that it wasn't what I really wanted to do.

Program Manager: *Any regrets?*

Vincent: No, none. I did stay out of the Navy, though, for two years and worked at a couple of jobs in Tulsa, Okla. — one in industry and one in the securities business. Then I got a letter in the mail from the Navy Supply Corps asking if I would like to come back into the Navy. And at that period in my life, it hit me just right. As a result, I came back in — after being out for 27 months — and I've never regretted it since.

From that point on, my Navy career included many acquisition tours. I was selected to go to post-graduate school at The George Washington University where I received an MBA in procurement and contracting; from there I went to my first procurement job at the Naval

Supply Center, Puget Sound, as the contracts director. I've been in and out of the acquisition, procurement, and contracting business for many years now: from buying spare parts and services, to administering and negotiating ship-building and ship repair contracts; to buying spares for surface ships and submarines at the ICP in Mechanicsburg, Penn.

My career has also included buying for the Naval Aviation Systems Command — aviation weapons systems, airplanes, and avionics — to being the Commander, Defense Contract Administration Services Region in Los Angeles. I've also served as Commander, Defense Contract Management Command International, and as Commander, Defense Contract Management Command [DCMC], responsible for managing most of the DoD contracts. These latter joint assignments taught me just how important administering contracts that have already been awarded really is.

After my assignment at DCMC, the Navy sent me back into the operating forces of the Navy, specifically the Pacific Fleet. Because of the enormous size of the Pacific AOR — 100 million square miles and 13 time zones — the logistic challenges are daunting.

Putting it altogether, it has been quite an acquisition education.

As Yogi Berra put it, "When you come to a fork in the road...take it." I guess meeting that station keeper at my Reserve unit was a fork in the road for me.

And I think, very frankly, in terms of coming up through the ranks over the course of my career, that's happened an awful lot. Because I haven't had any real grand design necessarily, whether it's to be a Navy flag officer or an acquisition officer. I just enjoyed being a Navy officer, especially a Navy Supply Corps officer.

I'm a very grateful, fortunate guy, who has taken whatever comes, at whatever level I was at, and just tried to do my best.

Program Manager: What was your reaction when you received confirmation that you were going to be the next DSMC Commandant? Did you actively seek this assignment? Why?

Vincent: It was mixed on probably different levels. One is, I loved Hawaii. I loved being back in the Navy operating forces, and the kinds of challenges and breakthroughs we were making at CINCPAC Fleet in various areas of supply and logistics support. And of course, I loved the weather, the people I worked with, and the Hawaiian people. So, when you think about moving from there in the December-January time frame, it really was an environmental shock.

On the other hand, after two-and-a-half years there, I think that we were ready to come back to the continental United States. We had no aversion to coming back into the Washington arena and certainly no aversion to coming back into the acquisition area, where I believe I can contribute in some measure, to improve the overall acquisition process.

No, I had no idea of ever becoming Commandant of the Defense Systems Management College. But I must say it was an honor, particularly when you consider that I'm the first Navy Supply Corps officer to be offered an opportunity like this.

Program Manager: Many of our readers may remember a former DSMC Commandant also named Vincent, who was also an Admiral in the U.S. Navy. Did you know him?

Vincent: It's interesting that out of 14 DSMC Commandants, two were named Vincent and both were Navy Admirals. I did know Admiral [William] Vincent.¹ In fact, he served in the Brunswick, Maine, area while I was living in Brunswick but actually working at Bath, Maine, where I was assigned as the contracts officer for the Supervisor of Shipbuilding and the ship repair (SUPSHIP).

Then when he was the Commandant here [DSMC], I was the Commander, DCMC. Occasionally, I'd get his telephone calls

or mail would be misrouted. And he and I both came from NAVAIR [Naval Air Command] about that point in time — though I didn't know him well, I certainly met him at various venues and conferences.

Program Manager: Please tell us about your leadership style. In the short time you've been our Commandant, people describe you as candid and open to new ideas.

Vincent: I'm sure I have a leadership style. But I would be hard-pressed to categorize it. When I was doing my MBA courses and taking various management-type courses, I remember (I thought it was interesting then, and I see why he said this) one of my professors saying, "You will read all of these treatises on different management philosophies — but in the end, you will develop your own."

And I think he was right. Now, whether I've developed one that's a classic textbook style, I don't know. You, the staff, and faculty may ultimately be the best judge of that.

But you are right. I have believed and, for the most part, practiced openness — trying to get to know people that I'm working with and around, and just trying to create an environment that makes people want to come to work or school, as the case may be, and give it their best efforts. I don't want our students or staff to get up in the morning and dread coming here.

But if you create an atmosphere, in my opinion, that lets people do their jobs, gives them the right kinds of resources, tools, visibility, and recognition, as well as a sense that they're empowered and contributing to something important, then I believe we're really going down the right path. When done properly, it encourages teamwork and team growth.

I want the students, staff, and faculty to feel comfortable in discussing problems openly among themselves and with me. The challenge for me is not to engage in all the issues. I try to keep a balance and

know enough of what's going on to keep the organization on the right course.

We here at the College have a tremendous opportunity and responsibility to be not only leaders, but also mentors. Where possible, I think mentorship is part of creating the right kind of an atmosphere for our students, staff, and faculty.

I will always challenge the "We've always done it this way" attitude. I will ask lots of questions. Some of them are going to be, perhaps hard to answer. But we must ensure that we're trying to make a good product even better. Because as we know, the budget is reducing and we're going to be considered part of that costly infrastructure that you hear about — that costly infrastructure that needs to be reduced to pay for the kind of force modernization that the DoD leadership wants.

Program Manager: From your vantage point, is the Navy moving out "full speed ahead" to support and implement the tenets of acquisition reform?

Vincent: Just before I left Washington, D.C., and went to CINCPAC Fleet, my observation was that acquisition reform was in kind of an embryonic stage and it was being accepted in pockets of the Navy. There were lots of you-need-to-show-me attitudes, so the trust factor still needed to be developed, such that if you applied your judgment and used acquisition reform you weren't going to get your hand slapped.

I think that we are beyond that. And what I'm seeing now and what I saw, from the Pacific Fleet side, is an acquisition process beginning to be more user friendly and customer friendly; that people in the acquisition or contracting business are prone to be more customer-oriented. There is much more open communication between the requirements generator and the person who is going to actually fill that requirement.

The process has improved, and it's going to get even better because acquisition reform is ongoing at various levels.

Whether it's micro purchases, small purchases, large procurements, or system acquisitions, the bottom line is that acquisition reform has indeed taken hold in the Navy. We've come a long way. Certainly, we've got a lot further to go.

Program Manager: *Of all the acquisition reform initiatives promulgated by OSD, which ones would you say are going to give us "more bang for the buck?"*

Vincent: I bet you would get as many different responses to that question as the number of people asked. On a very practical level, I think the IPT initiative is giving us a lot more bang for the buck. Because by its very nature — teaming — it's going to open communications, break down barriers, and hopefully, reduce or eliminate stovepipes, which will, in turn, allow us to get "more bang for the buck," both in terms of dollars and the propensity to institutionalize other acquisition reform initiatives.

Not only will IPTs allow people to communicate, but they also provide a forum to bring ideas forward, have those ideas aired without fear of being penalized, and allow those ideas to get into the decision process they deserve. This should lend itself to changing and improving the process, leading to another acquisition reform initiative — best practices.

I'm convinced best practices will come from the people who are actually implementing reforms, bringing those ideas forward, so we can make that change. So we go from IPTs to best practices.

Another initiative we will get a lot from in terms of cost effectiveness and pay-back is the single process initiative. By all indications, it should reduce up-front costs. And by that I mean if we have a contractor who is doing business with the Army, Navy, Air Force, Marines, and perhaps some other non-DoD activity — all with very large contracts with very specific contractual, probably different quality-type requirements — which set of quality processes or quality requirements does the contractor use to satisfy the customer?



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Obviously, if the contractor has only one plant, they can't have several different production lines for all of these different contracts. That just adds costs on both sides.

So if you can have one single process that has the optimum quality control, process control, ISO 9000, or whatever standards we would all want and could agree to — then the contractor wouldn't have to price differently when bidding or proposing on contracts. Single process initiatives also allow both industry and the government to further reduce the number of people in plants and save money on both sides.

Program Manager: *With the downsizing of DoD, what do you see on the horizon for the education of our professional acquisition workforce? Is it realistic that we're going to be able to do more with less?*

Vincent: Almost everything that we've been talking about frankly, in terms of acquisition reform is designed to bring us closer to a smaller acquisition workforce. They're going to have to be even better educated and trained than ever before.

I say that because I don't see the requirements going down at all in what the Navy, the Army, or the Air Force is responsible for in terms of mission. Certainly, procurement budgets have reduced significantly, but they are projected to stabilize and even increase in the out-years.

And the acquisition workforce has also been downsized and will continue to be downsized, but yet we'll still have hundreds of thousands of requirements every year flow through the total system, whether we're talking small purchase, large purchase, or systems acquisition. We're going to have automated systems as well as educated and highly trained people in place to handle those requirements.

As for the need for training, it's a requirement that will never end. DSMC, as part of DoD's educational system, is going to have to give considerable

thought to how we're going to do business in the future in terms of delivering education and training to our acquisition workforce.

We have a very important responsibility in terms of the whole Defense Acquisition Workforce Improvement Act and the requirement to deliver the right kinds of education, in the most efficient and cost-effective manner, and to be able to do, basically, "more with less" — that is our mandate.

What's the measurement of how well we do that? I don't know yet.

The size of the acquisition workforce is constantly discussed and debated. But when you consider the approximately 189,000 acquisition workforce members² out there, and that 40 or 50 percent of them probably fall into the need for continuing education, how are we going to do that? Clearly this has created student throughput, queuing, funding, and investment issues that will change our methods of course delivery.

But it has to happen. It's got to happen just because the world is moving that way, and the expectation is moving that way. As a result, the need for training and education is probably greater today than it ever has been.

Program Manager: *Having been geographically restricted to Hawaii, with the closest DSMC Region located in California, would you comment on the benefits of Technology-Based Education and Training, specifically Video TeleTeaching, as it affects those in geographically dispersed areas, even perhaps on a submarine?*

Vincent: When you're outside the continental United States, you realize the value and profound impact of video teleconferencing, automation, E-mail, and other technology that makes our lives so much easier. And when you consider that you have five or six hours' difference from Hawaii to Washington; from Hawaii to Yokosuka, Sasebo, or Guam; and even 12 hours' difference from some locations way out in the Western Pacific to Washington; it's absolutely imperative that we

come up with ways of educating that segment of the acquisition workforce better, faster, and cheaper.

And we're not just talking about the time difference. There's also the issue of distance and travel cost. It's very expensive to send people from the Western Pacific, Guam, Japan, or even Honolulu — whether it's to California, or whether it's to Washington.

I can tell you from past experience when I was in an area that was remote from training facilities — whether it was at Naval Supply Center, Puget Sound, or whether it was up at the Contracts Office of SUPSHIP in Bath, Maine — wherever it was, I always wondered why I couldn't get one trainer to come there and train 15 or 20 people rather than send 15 or 20 people to one trainer.

And I don't think that's changed. Anywhere you are, when you're trying to manage an organization with a limited budget, and work still has to be accomplished while people are out getting their training and education, you have to make hard choices between needed training and getting the job done.

While in an embryonic stage, technology-based education and distance learning will enable us to train more people, faster and cheaper.

I personally don't think there's a cookie-cutter approach to technology-based education and training or distance learning. I don't think one computerized method is going to fit all the various educational needs.

With more automated education, I think the tool set of the individual educators and trainers will change. Part of that may be acquiring more technologists than we've ever had in the past, because we need to make sure that the systems are linked properly and stay that way. There wouldn't be anything worse than to have a Video TeleTeaching session stop right in the middle of a block of instruction, or to receive distorted audio or other types of interference.

I believe the LogOn Conference recently conducted by DAU at the University of Maryland was a real eye-opener to a lot of people, including myself, in terms of the systems and technology actually out there now. It will be a challenge: which ones to use, how they are used, and which ones best meet the acquisition workforce's needs.

Ultimately, we'll have courses designed that people can go through at their own pace. So if you get students who, because of their previous training, education, and experience can keep moving ahead through self-paced instruction, you in effect allow them to progress, without being hindered by others with less training, education, and experience who might slow down the whole class.

Program Manager: *As a graduate of our Executive Program Managers Course and former commander of several contracting activities, have you formed an opinion at this point, of the benefits of a DSMC acquisition education?*

Vincent: We at DSMC, as part of DAU, really do enjoy a special place in this acquisition reform movement. The more I think about it, the more I'm convinced that to really change our acquisition culture — change the way that we're doing business today — we have to start some of that change at all levels of our education and training processes.

When the acquisition career field first came into being, I remember various courses — and I'm talking about primarily the contracting side — that trained our acquisition workforce to be very disciplined, to use the rules, and to follow the rules. As a result, acquisition people came away somewhat fearful that if they didn't strictly follow the rules, various reviews would take place, either internally or even externally, with fingers pointed at the fact that they didn't follow established procedures, meaning they didn't do their job correctly.

I sense there's at least some of that risk-aversion culture changing, where they're not necessarily using the rules to find out why they can't do things, but trying

to look for rules that they can use to get on with the business of providing services, material, and weapons systems to the warfighter.

I believe DSMC is trying very hard to expand people's minds while they are here at our college — to train them; to give them tools to improve their business judgment; and to teach them how to build teams and work together. Their greatest challenge may occur when they get back into their workplace. Will they be allowed to use all that they've learned so that it isn't just "business as usual" when they return?

Program Manager: *Have you had the chance to talk to any Defense industry personnel about their involvement with DSMC and the importance of bringing an acquisition education to the private sector? In your opinion, are we serving a need in the private-sector community of acquisition professionals, and are we meeting their expectations?*

Vincent: Everyone that I've talked to in industry has good things to say about the College and the things that we're doing. I think, as far as I'm able to determine, industry believes the College is doing a good job. And industry sends students here, so we must be doing something right.

I do want to continue getting industry involvement with the College, as students and also as speakers or panelists. Clearly, industry can add much to the DoD student's educational experience, especially in terms of how they view acquisition reform working.

Program Manager: *What do you see as the biggest challenge facing the DoD acquisition workforce?*

Vincent: You know, I've thought about that one and I think keeping the acquisition reform movement continuously going forward will be our biggest challenge, not letting it become a program, per se, as we've seen so many programs come and go, but really becoming a way of doing business for the whole acquisition process. It needs to be ingrained,



DSMC was established
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education products
and services.

not only in the changes in the rules and tools necessarily, but just in the whole acquisition culture — the way people approach this business of supporting the warfighter.

Program Manager: *And what do you see as the biggest challenge facing DSMC and you as the new Commandant?*

Vincent: Some of the challenges that we must face are the same ones that OSD and the Services must deal with every day — a declining defense budget, a smaller workforce, and a smaller industrial base. And to meet these challenges, we need to continue enhancing the education and training of our acquisition workforce, to hone their critical thinking processes as well as their judgmental, evaluative, and team-building skills.

First, with the pace of change occurring today in the acquisition arena, we need to look at reducing the acquisition education and training cycle time. As soon as a new acquisition policy is written, we need to quickly incorporate this initiative into our courses and get it out to our students, the ones who will be implementing it.

Next, we need to look at providing education and training throughout the career of acquisition workforce members. They need to stay current with the latest DoD policies — what they learned three or four years ago may no longer be appropriate now, especially given the thrust of acquisition reform.

Finally, our faculty must also be current — it is important for us to have the right expertise available to help the workforce help themselves.

DSMC was established to provide the best systems acquisition education and training possible to those responsible for acquiring weapons systems. The College presently enjoys a worldwide reputation in government and industry for the quality of our education products and services. Our challenge then is to continue this momentum, especially when we are transitioning to technology-based

learning so that the same quality is maintained, while simultaneously pushing our courses to reach more and more of the workforce. We can achieve this if we stretch our imaginations, increase our abilities, and use our resources more effectively and efficiently.

Program Manager: *Admiral Vincent, thank you for your time. Is there any message you would like to leave with our readers, particularly our DAU consortium schools, and all the PEOs/PMs on the front line of this acquisition reform movement?*

Vincent: I would like them to know that what I have found so far at the Defense Systems Management College is a lot of talented and dedicated individuals, both on the faculty and the staff, that really want to do the best job they can of training and educating the acquisition workforce.

What we need to know is exactly what all of the expectations are from all of our customers — students, PEOs, PMs, acquisition executives. They are part of the acquisition workforce and we want their input so that, together, we can ensure we're on course in an ever-changing environment.

When students leave DSMC, we want them to be better for having been here, and to have added value to their professional lives and career so that the people whom they go back and work with can actually see a positive difference in their job performance.

I want our readers to know that the College is here to do that mission we're charged to do — educate the acquisition workforce. And we want to do it in the best manner that we can. We need our customers as our partners in this endeavor.

ENDNOTES

1. Navy Rear Admiral William Vincent, DSMC Commandant, July 26, 1991 — March 25, 1993.
2. Jefferson Solution Study, Review of the Department of Defense Acquisition Workforce, DASW01-97-M-1847, September 1997, prepared for OUSD (A&T) by Jefferson Solutions, Washington, D.C.

REAR ADMIRAL LEONARD VINCENT, U.S. NAVY

Commandant

Defense Systems Management College

Rear Admiral Leonard "Lenn" Vincent, Supply Corps, U.S. Navy, became the 14th Commandant of the Defense Systems Management College effective Dec. 30, 1997. Prior to his assignment as Commandant, Vincent was the Deputy Chief of Staff for Logistics, Fleet Supply and Ordnance, Commander in Chief, U.S. Pacific Fleet, Pearl Harbor, Hawaii.

A native of Oklahoma, Vincent entered the Naval Reserve Program as a seaman recruit. Following his graduation from Southeastern State Teachers College in Oklahoma, he received his commission from the U.S. Navy Officer Candidate School. Vincent also earned an M.B.A. from The George Washington University. His military education includes completion of the Navy Supply Corps School and the Armed Forces Staff College.

A member of the Navy's acquisition professional community, his past assignments include Director of Contracting, Naval Inventory Control Point; Commander, Defense Contract Administration Services Region; Commander, Defense Contract Management Command (DCMC) International; and Assistant Commander for Contracts, Naval Air Systems Command. He also served as Deputy Director for Acquisition Management, Defense Logistics Agency; and Commander, DCMC.

His sea duty includes assignment to the U.S.S. *Pensacola* (LSD 38) in October 1972 as a supply officer; and in July 1982, assignment as supply officer on the submarine tender U.S.S. *Dixon* (AS 37).

His military awards and decorations include the Defense Superior Service Medal with gold star, Legion of Merit, Defense Meritorious Service Medal, Meritorious Service Medal with three gold stars, Navy Commendation Medal, and Navy Achievement Medal.

Vincent and his wife, Shirley, have three children: two daughters, Lori and Tiffany; and one son, Stephen.



William P. "Bill" Adams retired after 27 years of federal civilian service effective Feb. 3, 1998. Assigned to the College in July 1990, Adams served as the Director, Contracting and Logistics Operations Department, Division of College Administration and Services.

Army Lt. Col. Aaron R. Andrews retired effective Sept. 1, 1997, after serving over 22 years of active duty in the U.S. Army. Assigned to the College in December 1996, Andrews served as the Director of the Automation Operations and Education Department and Program Manager, Electronic Campus.



Army Lt. Col. John N. Lawless, Jr., became the Director, Contracting and Logistics Operations Department, Division of College Administration and Services, effective Feb. 2, 1998. Assigned to the College in January 1997, Lawless previously served as the Chief of Plans and Studies as well as Director, Academic Requirements Department, Academic Programs Division.

Army Lt. Col. Patricia P. Lane became the Director, Automation Services Department, Division of College Administration and Services, effective Sept. 2, 1997. Assigned to the College in July 1994, Lane's previous DSMC assignments included Program Manager, Electronic Campus; Professor of Software Acquisition Management, Faculty Division; and Course Director, Intermediate Software Acquisition Management Course.



Army Col. Charles W. Westrip, Jr., retired effective Feb. 1, 1998, after serving over 26 years of active duty in the U.S. Army. Assigned to the College in August 1996, Westrip served as the Dean of College Administration and Services.

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May 4-8, 1998



THE UNDER SECRETARY OF DEFENSE
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25 FEB 1998

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARY OF DEFENSE (COMPTROLLER)
UNDER SECRETARY OF DEFENSE (PERSONNEL & READINESS)
ASSISTANT SECRETARY OF DEFENSE (COMMAND, CONTROL,
COMMUNICATIONS AND INTELLIGENCE)
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE
DIRECTOR OF OPERATIONAL TEST AND EVALUATION
DIRECTORS OF DEFENSE AGENCIES

SUBJECT: Acquisition Reform Week III - May 4-8, 1998,
"Leading and Embracing Change: Institutionalizing and Accelerating
Acquisition Reform"

Acquisition Reform continues to be a critical element of the Department's strategy to meet the needs of the warfighter by providing goods and services better, faster and cheaper. To ensure the strategy is successful I think it is vitally important that we take time to discuss at every level of the chain of command the application of our ongoing acquisition reform initiatives and to determine how best we can accelerate their implementation. Therefore, May 4-8, 1998 has been designated as the Department of Defense Acquisition Reform Week III. The theme for that week is: "Leading and Embracing Change: Institutionalizing and Accelerating Acquisition Reform."

Sometime between May 4-8, I would like your government-industry teams to cease their normal operations for one day and focus on our acquisition reform initiatives - those most critical to the effectiveness of their team, to share implementation successes, and to determine how best they can be applied to the team's mission.

Commanders and managers at all levels will be responsible for planning, conducting, and participating in the day's activities. To that end, we will not dictate the day's agenda. Each team will design their own activities consistent with the needs of their organization. Those activities may include: case studies,

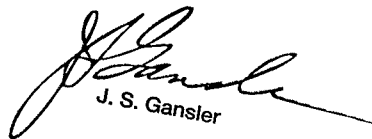
- 2 -

discussions of lessons learned, panels, speeches, classes and simulations. We must emphasize the day-to-day application of our initiatives while training as we work - as a team.

To support you, the Defense Acquisition University's Acquisition Reform Communications Center (ARCC) will be providing you with a "Teaming Package" of materials and educational tools that will be helpful. Those materials will include case studies, videotape presentations, and simulations that highlight implementation of our acquisition reform initiatives. Teams may use these materials to supplement or add focus to their own training programs, both during AR Week III and throughout the remainder of the year. Instructor guides will be provided to assist managers in designing and leading their own training. This training package, together with our satellite broadcasts and other Service/Agency-hosted training events supports the Secretary's National Performance Review goal of providing 40 hours of continuing education and training to the acquisition-related workforce.

During Acquisition Reform Week, I want each team to develop an action plan that sets hard targets and tough standards for achieving their acquisition reform objectives. Plans should include metrics that can be periodically reviewed to evaluate progress. I believe such an approach is fundamental to institutionalizing and accelerating acquisition reform initiatives.

We've accomplished a great deal, but we still have a long way to go. Let's capitalize on the opportunity offered by AR Week III to sustain our momentum, and take the next step on the road to providing better, faster, and cheaper products to our customer - the warfighter.


J. S. Gansler



From The Telegraph to the F-22

Insulating Your Program Against Manufacturing Challenges

MAJ. MARK J. SURINA, U.S. AIR FORCE

You, as a new program manager, will be tempted to place manufacturing low on your long list of issues. It might seem the least of your worries. You could reassure yourself in several ways:

"Development planning is going to take up all the team's time; we'll just have to build it after we figure out what we want. That's what we pay the contractor for, anyhow — he's the manufacturing expert."

"We'll incentivize the contractor and he'll be so motivated that he'll jump right past all those manufacturing challenges (whatever the heck they are) to get that extra incentive."

"Let's hit him with a liquidated damages clause and get our money back for late deliveries; that'll ensure performance!"

"He signed up to deliver. If he has to work everyone overtime and go into debt, so what? We're getting our production units cheaply!"

If you're thinking this way, congratulations — that's the sun shining through your porthole on the *Titanic*. We design and build complicated systems — or at least, we design them. Yet it's all too easy to forget what it takes to build an F-22, a C-17, or a satellite. The program manager is well advised to assume that risks exist in manufacturing; in this case, assumed guilty until proven innocent!

Perhaps the story of another "no-risk" manufacturing effort would help you remember the risks you face. We can learn

*Insulators are those gizmos you see
at the top of power poles.
Most today are porcelain.*

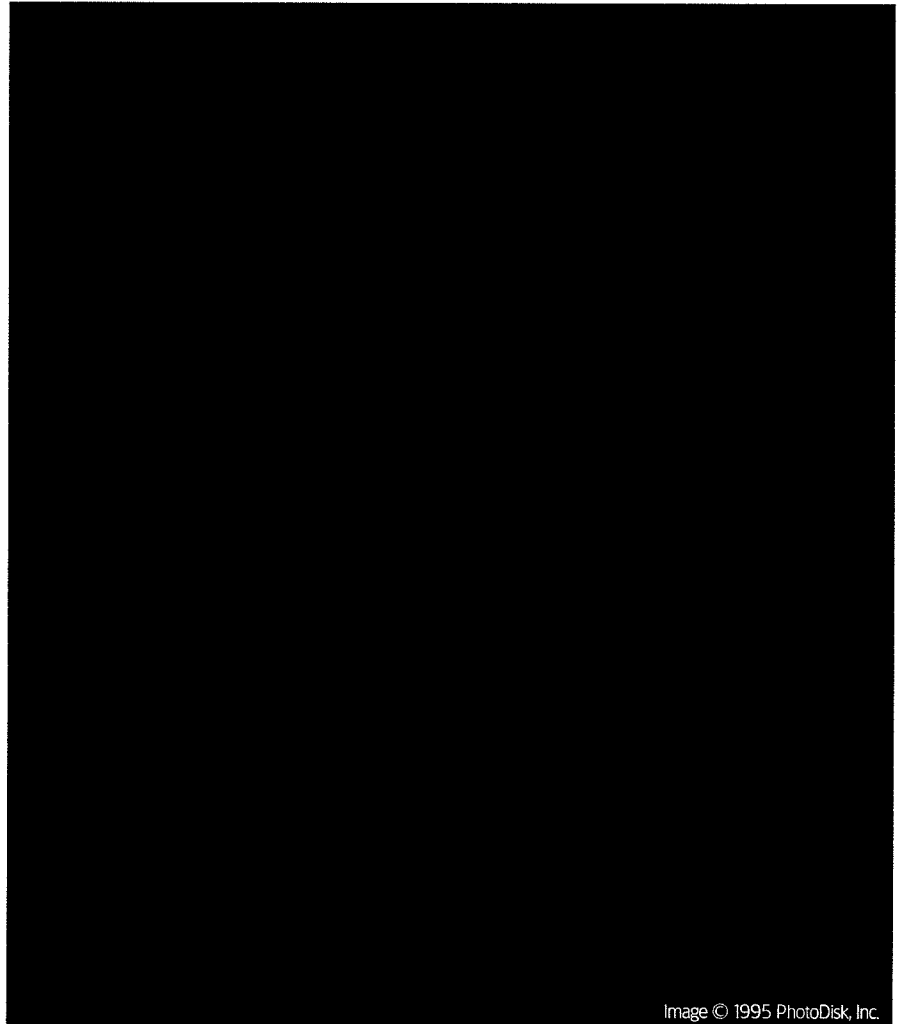


Image © 1995 PhotoDisk, Inc.

Surina is the Joint Transportation Technology Program Manager, U.S. Transportation Command (USTRANSCOM) TCJ5-SC, Scott AFB, I11. An avid collector of insulators, Surina is also a graduate of APMC 95-2, DSMC.

a lesson, surprisingly, from a manufacturing effort early in this century. It was a commercial, off-the-shelf technology, just like the "future" of defense acquisition. You've seen the product, and benefited from its use...now you can benefit from its history.

"What Does This Have To Do With Acquisition?" You Ask!

Insulators are those gizmos you see at the top of power poles. Most today are porcelain. However, in the late 1800s and early 1900s, porcelain manufacturing and materials technology hadn't advanced sufficiently to give reasonable cost, performance, durability, etc. Glass was therefore the material of choice. Many of these faithful glass insulators made in the late 1800s and 1900s (up to about 1975, when domestic production ceased in favor of the now state-of-the-art porcelain) are still in service. You've probably plinked at them — [admit it, now! — with a BB gun or rocks]. Your granddad had some in his barn. They're everywhere. If you wanted to buy them, they'd be perfect for a streamlined acquisition: after all, they're commercially produced and have been available "off the shelf" for over a century. Could risk be lower?

Stay with me on this; I have a destination. But first, a bit of history.

A Long Production History

The simple "bureau knob"-shaped insulators of the first telegraph line in 1844, between Washington, D.C., and Baltimore, Md., gave way to a myriad of improved designs.¹ All were based on capping the wooden, conductive pin with a glass cover (sometimes covered itself with wood in the case of the Wade-style insulator). Insulators designs ranged from an egg-shaped insulator to one shaped like a teapot. The Union and Confederate Armies were extensive early users of insulators for battlefield telegraphy.

Like the birth of many industries, the time was ripe for innovation. Some designs worked well; others allowed dirt buildup and did not adequately isolate

the pin, leading to "escape" or loss of signal, especially in rain and fog². In fact, it's been told that one New York City Railroad telegraph operator was accused of being asleep on duty, when instead, escape from poorly-insulated, wet lines had shorted out the circuit.³ The operator was Fred Locke, who went on to develop numerous glass and especially porcelain insulator innovations. He is known as a pioneer of the borosilicate glass family [the same family which includes the well-known Corning Pyrex; but that's another story].

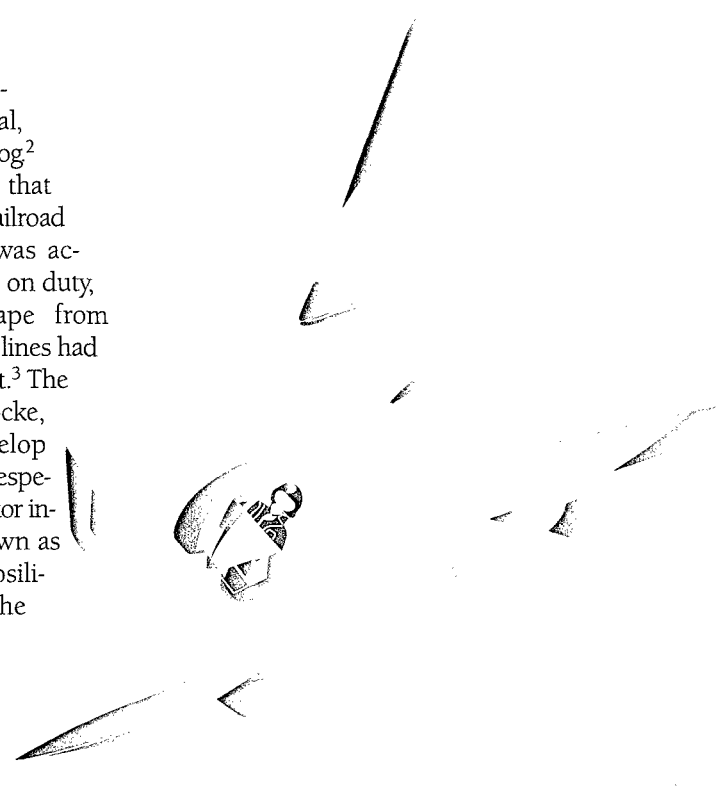
Regardless of their insulating effectiveness, insulators in production through the American Civil War shared a practical problem: there was no reliable method to keep them from popping off the pin from the effects of wind and weather [helps illustrate the difference between planned performance and performance in use, doesn't it?].

The answer came in 1865, when Mr. Louis Cauvet patented a method of producing screw threads in glass.⁴ This was not a trivial production problem — the glass has to have time to cool sufficiently to allow the screw thread-producing mandrel to be removed without deforming the object, yet mass production demands speed.

State-of-the-Art Changes

Cauvet's Patent doomed the threadless insulator. Several other notable manufacturing patents were issued in the next 35 years, including those by Oakman, Pennycuick, and Hemingray, for methods of producing threaded glass insulators.

It was a great market to be in around 1900. As manufacturing methods proliferated and expertise increased, burgeoning construction of telegraph, telephone, and electrical lines caused a huge demand for insulators. High-speed



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production was required to meet that demand; yet, the maturing glass insulator industry was also held to increasingly rigid quality requirements. Then as now, speed (schedule) competed with quality (performance) and as always, cost.

Many patents were obtained. Now that the screw thread problem was conquered, the insulating quality, structural integrity, durability, and cost of insulators began to receive additional attention. Various designs were produced and sold to line construction firms, some of them quite whimsical, ranging from glass "hooks" to oil-filled insulators with names like "Fluid Insulator." Several manufacturers emerged as the front runners in North America, notably Hemingray in Covington, Kentucky; Brookfield in New York City; and Dominion Glass Company in Montreal.

Brookfield ceased production in 1922 after 53 years of successful operations. Their demise was attributed to an energy crisis caused by World War I, which caused a coal shortage; further, a shipment of insulators overseas for the Allies was destroyed by saboteurs. Increasing competition claimed its share of the company's viability.⁵ It's a situation akin to today's consolidation of the defense industry. Naturally, other companies hastened to fill the gap left by Brookfield.

A Sure Success — With an Emphasis on Quality

In November 1923, a state-of-the-art plant dedicated to insulator production opened in Lynchburg, Va. The Lynchburg Glass Company employed experienced managers from defunct Brookfield and other companies, who set out to compete with the front-runner, Hemingray, on a quality-of-product basis. Much of the equipment included insulator molds used at other plants.

So, Lynchburg boasted a new plant, seasoned managers, proven-successful designs, tested equipment, and continuing strong demand...most managers would agree that production was a low-risk concern. Furthermore, the Lynchburg slogan was "Supreme Where Quality Counts."

A quality product seemed a "sure thing"

However, the initial euphoria departed early, as it often does in complex projects. Although Lynchburg scaled up to producing some 150,000 insulators each week in just 12 weeks, representing 14 styles of insulators, no profit was produced.

By the middle of March 1924, the company was in trouble. Production was halted the first week of April after only 16 weeks of operation [like today, reorganization seemed to be the answer], after which production resumed in November 1924. However, there were still problems with glass quality, resulting in a large number of rejects, which pushed production costs higher.

At this point, if this was a DoD contract, we would undoubtedly initiate a bottoms-up review. But such studies, though they may unveil problems, hold little chance of recovering lost ground, particularly in a competitive commercial environment.

Lynchburg was unable to identify, let alone remedy the problems, despite the advantages of a simple product, made with simple materials, in a mature industry, with experienced managers. The plant closed forever in May 1925, after only 44 active weeks of production. The plant was eventually demolished.

What had gone wrong?

Only then, during the demolition, was it discovered that a valve in a gas line feeding the main furnaces had been improperly installed in an inaccessible place and was partially closed. This had caused low gas pressure resulting in improper heating of the glass in the furnaces. The Lynchburg plant had been doomed to failure the day it was built!⁶

From the Telegraph to the F-22

Consider the product you are attempting to bring to the DoD. It's probably more complex than a glass insulator, and almost assuredly, a lot more expensive. Your career rests on its cost, performance, and delivery schedule. A vastly

complex system has to operate smoothly just to define the requirement, make the item, and give it the requisite quality and affordability. Why should you be sure that when development and testing are done, your problems are over?

Consider also those slick presentations on the advanced hardware systems now available for your system. Have you looked beyond the hardware itself to determine when it can be built, how long it will take to do so, and whether the contractors can deliver a quality product on time? You may find manufacturing and production are unproved steps, and their risk is unknown. You can't rely on negative incentives such as "liquidated damages clauses" to assure manufacturing readiness. The utility of a positive incentive in assuring production readiness is equally low if the contractor's manufacturing capability is fundamentally unsound, or if processes are unproved and therefore potentially high-risk.

Bring Out the Checklist of Questions

If you can answer these questions, prior to production, with a firm basis for your answers, you've got a chance to avoid unpleasant surprises.



Are you sure that materials are available? Are you confident in the reliability of their sources?



Are the manufacturing processes proven? By the current contractor?



Are the manufacturing facilities proven? With your program's processes?



Did production readiness reviews assure you the contractor is ready to scale-up to full-rate production?



Is slack time built in to allow for startup problems (regardless of your confidence)?

Why should your customer tolerate your ignorance in these areas? You might argue

that asking these questions at Lynchburg wouldn't have ensured success. Indeed, you can't fix everything. But a small-scale initial production run to prove the process and facility, with proper monitoring, would have revealed the temperature profile problem. Surely a pressure gauge on the gas lines would have pinpointed the source of the temperature problems through poorly regulated gas.

Lynchburg's facilities had not been proven; instead, having committed to full-rate production concurrently with plant startup, there was no chance to effectively react. There was also no time to decide on a strategy to fix the problem.

Experienced Program Managers Think Ahead

Next time you're assured of the readiness of a product to be fielded quickly — off the shelf — think beyond the glossy brochure you're presented. Ask some of

those questions posed earlier in this article. It won't take long to discover whether that product is really ready to go in production quantities, or just another terrific concept awaiting someone else to work through the manufacturing problems.

- Build in slack time whenever you can. Many schedules start out as notions and end up unalterable, so give your project the most "time insurance" your customer can live with.
- Ask for more than assurances: ask for evidence of production readiness. If this means a pilot or low-rate production run, ensure one is programmed.
- Don't expect that "sanctions" (or incentives) will overcome poor planning.

- If Lynchburg had this problem despite all their advantages in producing a low-tech product, what risks do you face?

Your program's manufacturing challenges — known and unknown — are like icebergs. Don't try to insulate yourself from icebergs — instead, turn up the heat — ask the smart questions early.

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6. Ibid., pp. 116-119.

FORMER VICE PRESIDENT RECEIVES WILLIAM J. PERRY AWARD



Photo by Richard Maltrox

DAN QUAYLE, 44TH VICE PRESIDENT OF THE UNITED STATES, IS THE SECOND RECIPIENT OF THE WILLIAM J. PERRY AWARD. SPONSORED BY THE PRECISION STRIKE ASSOCIATION (PSA), THE ASSOCIATION PRESENTED QUAYLE THE AWARD ON JAN. 15 AT ITS WINTER ROUNDTABLE, HELD AT THE CRYSTAL FORUM IN ARLINGTON, VA. PRESENTED ANNUALLY, THE WILLIAM J. PERRY AWARD RECOGNIZES LEADERSHIP OR TECHNICAL ACHIEVEMENT THAT RESULTS IN SIGNIFICANT CONTRIBUTIONS TO THE DEVELOPMENT, INTRODUCTION, OR SUPPORT OF PRECISION STRIKE SYSTEMS. PICTURED FROM LEFT: BILL EGEN, VICE CHAIRMAN, PSA AND BOEING COMPANY; QUAYLE; DR. PAUL G. KAMINSKI, FORMER UNDER SECRETARY OF DEFENSE (ACQUISITION AND TECHNOLOGY), AND CURRENT PRESIDENT, TECHNOVATION; RETIRED NAVY REAR ADM. WALTER M. LOCKE, FORMER DIRECTOR, JOINT CRUISE MISSILES PROGRAM OFFICE, AND FORMER CHAIRMAN, PSA.

Commercial Practices – Dilemma or Opportunity?

Risks — Yes, But Ultimately, Substantial Reward

LT. CMDR. MICHAEL H. ANDERSON, U.S. COAST GUARD
DR. ERIC REBENTISCH



Image © 1997, Artville LLC

*"I want you to try some of those new commercial practices in your acquisition program.
I hear they've produced some sizable cost and schedule savings."*

Anderson is the Planning Coordinator, Deepwater Acquisition Project, Headquarters, U.S. Coast Guard, Washington, D.C. Rebentisch is a Research Associate, Lean Aerospace Initiative, Massachusetts Institute of Technology, Cambridge, Mass.

As Cynthia stared into her steaming mug, she thought her future seemed as dark as her coffee. Having only recently returned to acquisition after an assignment in operations, Cynthia envisioned comfortably settling into her agency's familiar and time-proven acquisition practices. Her boss, however, had just dramatically changed her expectations by simply saying, "I want you to try some of those new commercial practices in your acquisition program. I hear they've produced some sizable cost and schedule savings."

Confronting the Real Issues

Commercial practices enable suppliers to efficiently conduct business with the government in a manner similar to that used with their private-sector customers. Like everyone in the defense acquisition community, Cynthia heard and read many accounts of program/project managers who reaped substantial cost and schedule benefits by implementing commercial practices. However, Cynthia was not so sure these new practices would produce reductions on her program. In addition, the corresponding impact of these "trendy" practices on long-term aspects of the program also concerned her. For instance, how do commercial practices affect system quality? System support? And most importantly, life-cycle costs?

Any program can make trade-offs to save money in initial acquisition costs, but afterward the operational and sustainment commands can pay exorbitantly for the rest of a system's service life. Cynthia regarded her reputation as directly linked to the acquisition, and the warfighter in the field urgently needed the system. The thought of using anything other than tried-and-true government acquisition processes caused her great concern.

Cynthia's mandate to implement commercial practices illustrates the real issues confronting today's defense acquisition managers. Throughout the Federal Government, agencies are actively investigating and testing new acquisition processes to cope with declining fiscal and personnel resources. Spurring this

change are several recent legislative reforms such as the Federal Acquisition Streamlining Act of 1994, the Defense Acquisition Management Reform Act of 1995, and the Federal Acquisition Reform Act of 1996. In addition, numerous internal agency acquisition policy changes promote and in some cases, mandate the use of many specific commercial practices.

In this dynamic acquisition environment, is Cynthia's skepticism and reluctance toward commercial practices grounded in fact, or is it simply her personal resistance to change? In the larger picture, how successfully have these practices fared in defense acquisition? And has the acquisition community established any common lessons learned from early implementation experiences?

To probe these questions and to capture the government's overall results and lessons learned in implementing commercial practices, we contacted program representatives from 37 defense acquisition programs that DoD and the defense industry regarded as pioneers in incorporating commercial practices into their acquisition strategies. Our contacts included representatives of acquisition programs across all the Services — Army, Air Force, Navy, Marine Corps, and Coast Guard.

From this group, 23 programs yielded sufficient data for detailed research and study purposes. These 23 programs ultimately became our program sample. Included in the 23-program sample were seven aircraft programs, five ship programs, four munitions programs, and seven major systems acquisition programs. For each of these programs, we interviewed front-line government acquisition managers about their hands-on experiences implementing commercial practices.

Overall, we found commercial practices afforded strong benefits for cost, schedule, and quality with few, if any, reported compromises to life-cycle support and life-cycle costs.

This article relates the highlights of our research into the actual implementation

experiences of defense acquisition program representatives who pioneered the use of commercial practices in their programs and projects. We conducted our research under the auspices of the Lean Aerospace Initiative (LAI) at the Massachusetts Institute of Technology.¹

Commercial Practices Currently In Use

To define those commercial practices currently in use, we first agreed on the Defense Systems Management College (DSMC) definition of commercial practices. DSMC defines commercial practices as: "the techniques, methods, customs, processes, rules, guides, and standards normally used by business but either applied differently or not used by the Federal Government."

Many defense acquisition managers quickly pointed out that this definition is rather broad and encompasses a gamut of business practices. Yet we found the range of possible practices rather limited. Some commercial practices were not currently achievable due to legislative and regulatory barriers; others were simply not suitable for the government environment.

We next asked program representatives from our sample program to define the practices currently used in their own programs that they viewed as commercial practices. In general, the following eight distinct practices encompass the responses we received:

No. 1 — Past Performance. Uses previous performance on government contracts as a source evaluation factor. A 1995 change to the Federal Acquisition Regulation mandated past performance for all contracts over \$1 million.

No. 2 — Best Value. Determines contract award on a range of evaluation factors besides simply lowest price, such as quality, life-cycle support, life-cycle costs, and other relevant factors.

No. 3 — Commercial Warranties. Rather than special, government-unique warranty requirements, the acceptance and use of standard commercial product

warranties or the purchase of extended product warranties.

No. 4 – Government/Contractor Cooperation and Relationship. A cooperative, mutually beneficial relationship between government and its contractors. Characterized by reducing government oversight, establishing long-term partnerships, and including contractor or industry participation in program Integrated Product Teams (IPT).

No. 5 – Performance Specifications. Defines the government's requirements in terms of performance. Gives the contractor more flexibility to reduce costs and enhance support. In addition, shifts ultimate responsibility for performance to the contractor.

No. 6 – Commercial Specifications and Standards. Requires the same design, production, management, and accounting practices in government contracts as are currently used in the commercial marketplace. In 1994, the Secretary of Defense mandated this practice for DoD.

No. 7 – Streamlined Contract Administration. Fundamental drive to

simplify government acquisition processes by streamlining internal policies and reducing contract data deliverables (CDRL). For instance: one program consolidated 23 management documents into only five; several programs reaped substantial efficiencies by using the Internet for electronic data interchange.

No. 8 – Commercial-Off-the-Shelf/Non-Developmental Item (COTS/NDI). Recent FAR, Part 12 procedures greatly simplified the COTS/NDI acquisition process.

The eight practices previously cited (all executable under existing government regulations/policies), are currently actively promoted and implemented within the Federal Government. Using our 23-program sample as a basis from which to measure, Figure 1 depicts the frequency of use of the eight commercial practices specified in the preceding paragraph. As shown in Figure 1, recent acquisition reforms (e.g., military specifications and standards reform, the use of performance specifications, contract streamlining) figure prominently in the practices cited. Interestingly, a large

number of program representatives considered developing a close working relationship between the government and contractor as an important commercial practice.

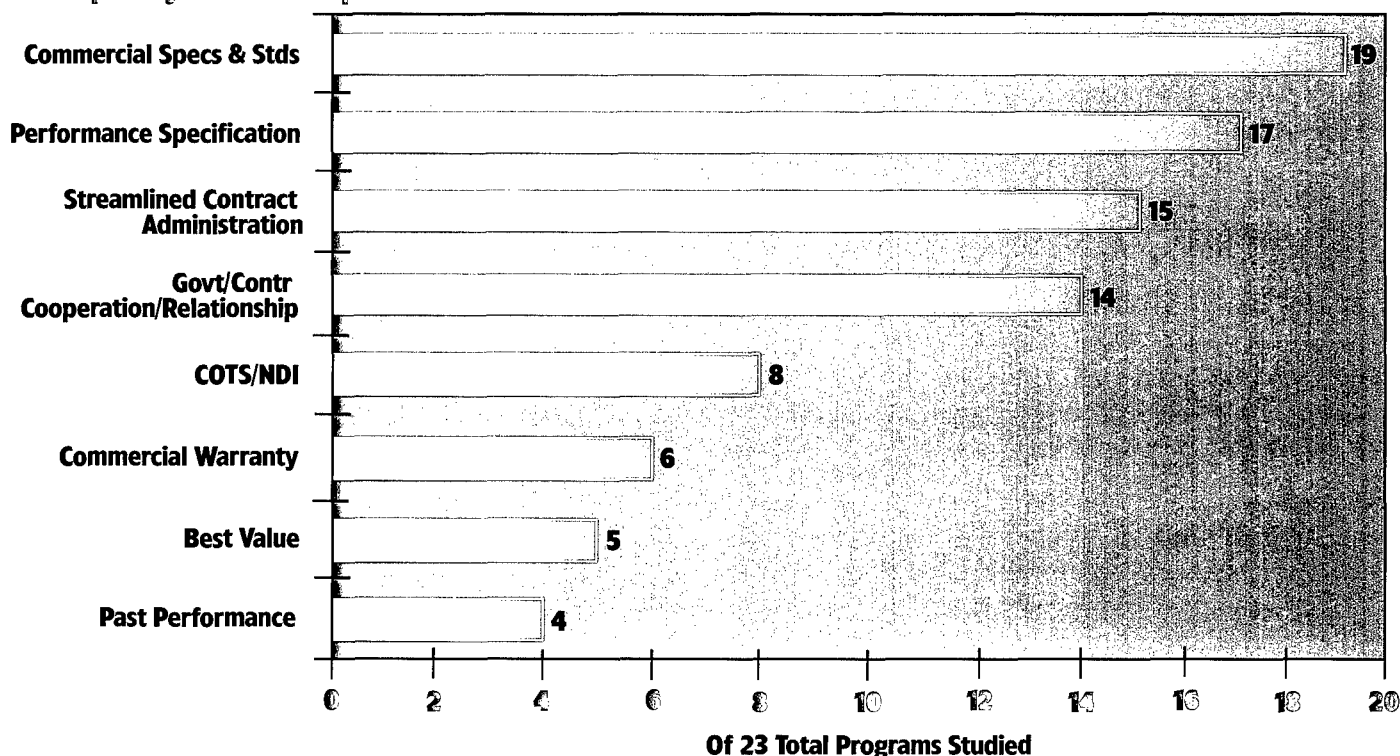
What Benefits Result From the Use of Commercial Practices?

The improvement in cost and schedule performance attributed to the use of commercial practices varied substantially, depending upon the specific practice used. As illustrated in Figure 2, the practice of government/contractor cooperation and relationship was the clear leader for cost reductions, yet its impact diminished significantly for schedule reductions. Nonetheless, the most important observation of Figure 2 is that five practices essentially accounted for all of the claimed reductions:

- Developing a Close and Cooperative Relationship Between Government and Contractor
- Use of COTS/NDI
- Streamlined Contract Administration
- Use of Commercial Specifications and Standards
- Use of Performance Specifications

FIGURE 1.

Frequency of Use of Specific Commercial Practices



Three practices reflect negligible performance impact but probably demonstrate their benefits during other phases of the system's life cycle such as source selection or sustainment:

- Best Value
- Past Performance
- Commercial Warranty

Representatives from our 23-program sample of defense acquisition programs confirmed that their use of commercial practices indeed yielded valuable program benefits. Their use resulted in direct program savings totaling almost \$4 billion. Comparably, these savings correspond to an overall average savings of 4.3 percent per program.

To offer some perspective, a baseline for comparison of our reported cost savings is the 1994 DoD-sponsored Coopers and Lybrand study, "The DoD Regulatory Cost Premium: A Quantitative Assessment." In this study of 10 government contractors, substituting best commercial practices for traditional DoD regulations and oversight resulted in an acquisition program savings of 18 percent of value-added costs. To facilitate

our comparison, value-added costs can typically account for about half of a major defense acquisition contract's overall cost. Hence, the Coopers and Lybrand study concluded best commercial practices saved on the order of 9 percent of a major acquisition program's total contract cost. Although, our findings were not quite as high, an average 4.3-percent program cost reduction is still encouragingly substantial.

In addition to direct program cost savings, 13 of our programs attributed an average one-third staff reduction as a direct result of using commercial practices. This equates to a substantial overall total staff reduction of 884 positions. Even more, the personnel cost savings resulting from these staff reductions typically were in excess of reported program cost savings.

Complementing program savings, commercial practices likewise afforded sizable economies in program schedules. Sixteen of our programs directly attributed an average 29-percent schedule reduction to commercial practices. This corresponds to an average 17-month reduction in the acquisition schedule for

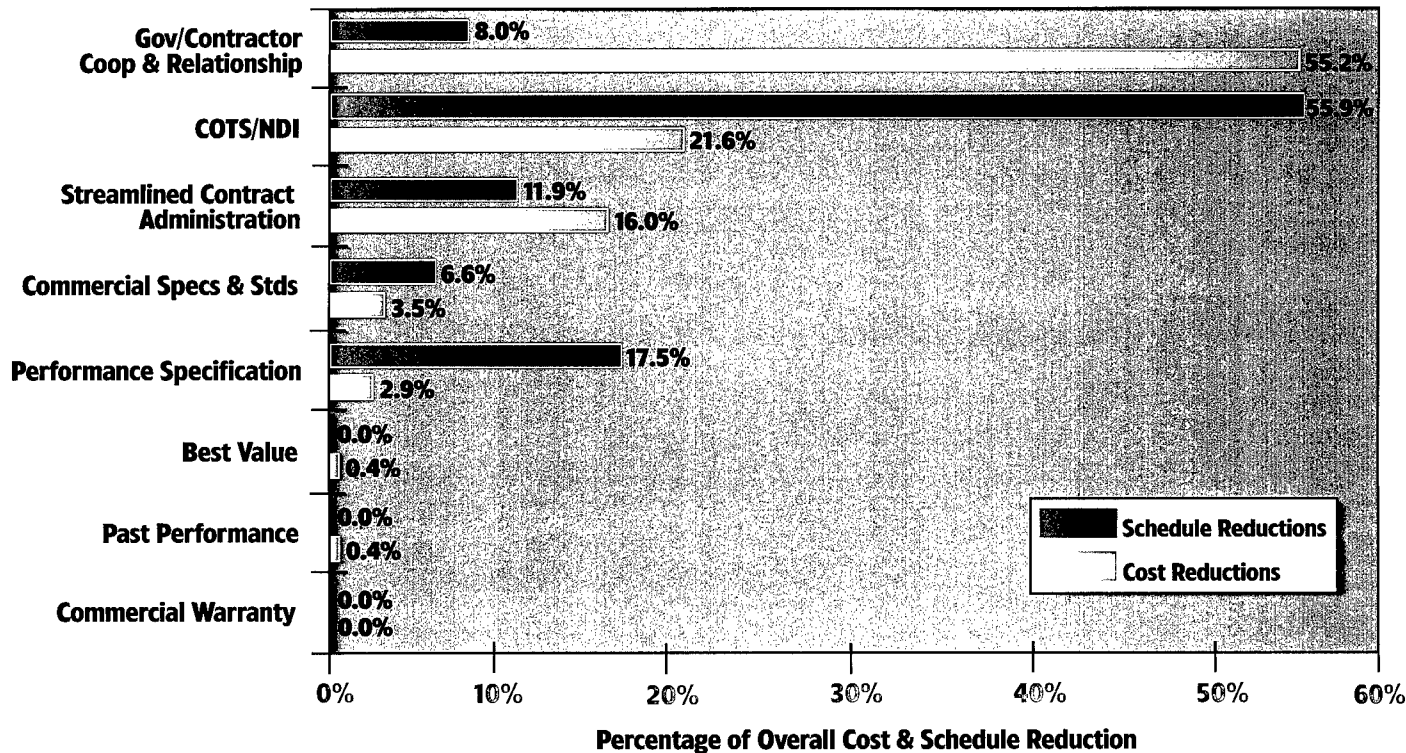
these programs. Commercial practices are a highly regarded tenet of federal acquisition reform, primarily because of their purported cost and schedule reducing impacts. Indeed our programs' results corroborate these touted benefits.

However, there are not as many documented studies directly assessing Cynthia's concerns about the corresponding impact of commercial practices on quality, life-cycle support, or life-cycle costs. To assess these issues, we asked our program representatives about their experience with these acquisition and sustainment issues.

Our program representatives claimed that the use of commercial practices actually improved two key measures of product quality — workmanship and performance. Quality of workmanship described aspects such as fit and finish, number of defects, and reliability. Quality of product performance captured how well the product performed in project testing or, when available, in actual field use.

Approximately two-thirds of the program representatives concluded that

FIGURE 2.
Cost and Schedule Reduction Performance of Eight Most Frequently Cited Commercial Practices



their use of commercial practices had directly promoted workmanship quality that was equal to or better than previous expectations. Responses on quality of product performance yielded even stronger support. Nearly three-fourths of the program representatives claimed performance quality improved as a direct result of their use of commercial practices.

The life-cycle support implications of commercial practices was a rather broad concept to quantify and evaluate. Obviously, in most cases the true life-cycle support issues associated with the use of commercial practices will only be experienced in years to come as systems managers field and monitor system maturity.

Nevertheless, we asked program representatives to project the future impact of their choices resulting from the use of commercial practices in five distinct areas: warranty coverage, maintenance and repair, spare parts, training, and documentation. Overall, they believed that use of commercial practices either produced no appreciable impact or slightly improved the five measures of life-cycle support previously cited.

Program representatives reported only one attribute — documentation — as negatively influenced by commercial practices. Discussions with the few representatives noting the problem revealed that degraded documentation was the result of deliberate cost/benefit decisions on their part; less-detailed, commercial-level documentation resulted in reduced program costs.

Our study of life-cycle cost implications of commercial practices closely followed our strategy employed for life-cycle support. However, in addition to assessing the same five fundamental attributes, we also studied the issue of product obsolescence. Rapid technological obsolescence is now a difficult challenge to acquisitions involving high-tech components and equipment. Once again, we believed the use of commercial practices contributed little toward increasing life-cycle costs.



With respect to product obsolescence, overall commercial practices enabled acquisition of a more technically advanced product, enhanced the ability to upgrade with future technology, and resulted in an expectation of eventual decreased replacement costs. Moreover, DoD is placing increased emphasis on reducing the total cost of ownership of the systems it procures. With the recognition that operation and support costs may represent as much as 70 percent of a system's total life-cycle costs, understanding that the use of commercial practices represents just one of many potentially beneficial trade-offs that can be made over the life of a weapon system to help reduce its ownership cost, becomes even more important.

Therefore, the evidence emerging from our 23 programs is that commercial practices can indeed fulfill the promise of lower program costs and accelerated schedules. Moreover, improved quality and negligible impacts on life-cycle support and life-cycle costs further complement these promising advantages.

Although not all commercial practices are appropriate for all acquisition programs, we advise Cynthia to stop resisting, give her boss a hearty "Aye Aye, Sir," and jump on board with commercial practices as soon as possible.

But How Does Cynthia Jump On Board?

Like Cynthia, our acquisition managers expressed some concerns about implementing commercial practices, specifically in the following four areas:

- The most commonly cited concern was uncertainty with ultimate product performance. This is quite understandable given that the shift to commercial practices changes the fundamental management and control of the acquisition program.
- The practice of performance specifications allows the contractor substantial design flexibility. Commercial specifications and standards brings a new and

relatively unfamiliar commercial foundation.

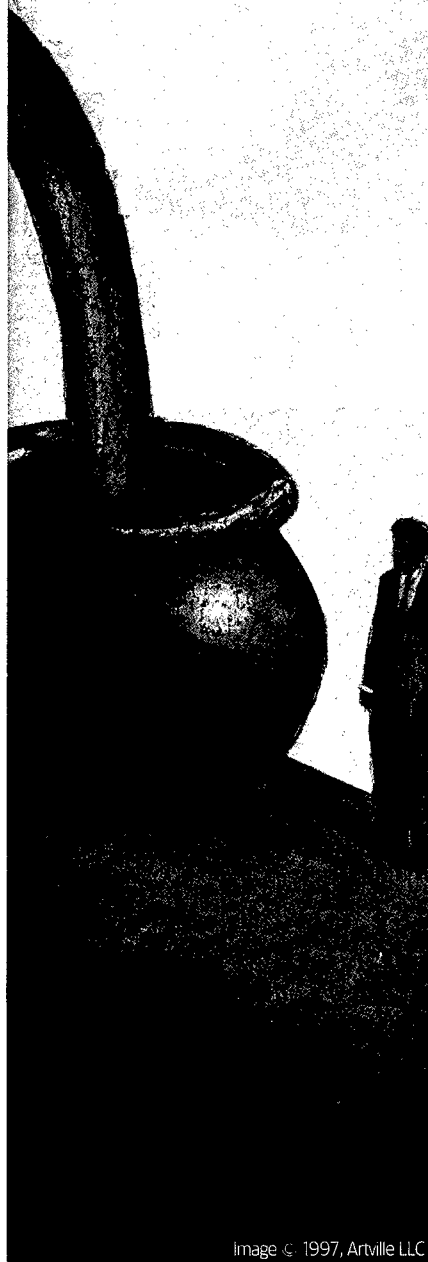
- The tactic of buying COTS/NDI introduces uncertainty of the durability of commercial products in the rigorous military environment.
- Lastly, the practice of government/contractor cooperation and relationship replaces government oversight with the need to share information through a trusting and open relationship.

The net result of these four practices is to essentially shift the fundamental familiarity and certain aspects of control from the government to the contractor. Our acquisition managers mitigated this risk by strengthening item performance requirements, by extending the scope and duration of program testing, and by increasing the breadth and involvement of program IPTs.

Besides risks, our program representatives found *the most common obstacle to implementing commercial practices was the inherent difficulty with cultural acceptance and bureaucratic delays*. For many programs, the innovative commercial practice spirit was not shared by their supporting organizations or their chains of command. As a result, these program representatives spent much of their time explaining or defending their commercial practice strategies in order to procure the services or authorizations necessary to proceed. The frequent occurrence of these obstacles illustrates that although the DoD highly publicizes and encourages commercial practices at the highest levels, in general the overall defense acquisition workforce is not uniformly on board and supportive of the initiative.

Fellow acquisition managers would tell Cynthia the prevailing method of gaining familiarity with commercial practices is still predominantly through self-education. Of four reported sources of commercial practice information – self-education, internal experience/sources, external sources, and formal training – 15 programs relied on self-education

*As the experiences
of Cynthia's peers in
our defense program
sample illustrate,
the rewards of
commercial practices
can indeed be
substantial.*



from published literature; seven tapped internal Service/agency experience and sources; four employed external Service/agency sources (such as experts from other government agencies or commercial consultants); and three obtained formal training from government or private instructors.²

This large reliance on self-education strongly suggests a need remains for additional training and sharing of information on commercial practices within the Military Services studied. For instance, one program representative wryly noted that personnel routinely learned from the “school of hard knocks.”

Nonetheless, those program representatives citing external sources as the most beneficial information resource shared an interesting insight. All four of those representatives specifically acknowledged industry as the single most valuable external resource. Their programs all included successful IPTs, with active industry involvement. The IPT process enabled the joint evaluation of commercial practices with the beneficial insight of industry's experience and perspective.

Conclusion – Dilemma or Opportunity?

Given these findings, is Cynthia's mandate for commercial practices really a dilemma, or is it an opportunity? As with anything new, adopting commercial practices has its risks as well as its rewards. As the experiences of Cynthia's peers in our defense program sample illustrate, the rewards of commercial practices can indeed be substantial. By learning from the commercial-practices pioneers in defense acquisition and practicing sensible management, Cynthia's leap to commercial practices can benefit her agency, her warfighter customer, and her ultimate customer – the U.S. taxpayer.

ENDNOTES

1. More information about LAI may be found at <http://www.mit.edu/lean/> or access the entire study at <http://comms2.rdc.uscg.mil/commercial-practices.pdf> on the World Wide Web.
2. Some programs reported more than one information source.

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The Journey Toward "Lean"

Lean Aerospace Initiative (LAI) Consortium Progresses

SUE BAKER

WRIGHT-PATTERSON AIR FORCE BASE, Ohio, Dec. 1, 1997 — In every age, there are visionaries — people who see beyond the moment, who dare to dream, who try to turn tomorrow into today's reality, much as Wilbur and Orville Wright who, in the early part of this century, catapulted their Wright Flyer into the skies, and forever convinced America that Man could fly.

Those who manage the Lean Aircraft Initiative (LAI) — now called the Lean Aerospace Initiative, to encompass future, space-based systems — also are such pioneers. Inheritors of a sprawling Air Force acquisition system that has in the past produced a ready arsenal for America, the LAI team is seeking a "better, faster, cheaper" way for the Department of Defense (DoD) and its commercial aerospace partners to accomplish the job of U.S. defense acquisition into the 21st century. Their ambitious, shared goals: to reduce the cycle time and cost of future military weapon systems by 50 percent, while improving product performance.

"We are serious; we are committed; and we are going to change the way we have operated for years," said Lt. Gen. Kenneth Eickmann, Commander, Aeronautical Systems Center (ASC) here, and co-chair of the LAI executive board. "LAI has to work, and it will."

According to LAI program officials, the effort has made significant progress toward its goals since 1993, when it was first inspired by Lt. Gen. Thomas R. Ferguson, Jr., former ASC Commander. He asked the Massachusetts Institute of Technology (MIT) to explore the possibility

of applying lean principles, originally developed by the Japanese automotive industry, to America's defense aerospace sector, to improve product performance while cutting the costs of weapon systems acquisition.

"The journey toward lean is well under way," said John Cantrell, LAI Program Director here in the Manufacturing Technology Directorate of the former Wright Laboratory (now part of the Air Force Research Laboratory). "In September 1996, the program entered Phase Two and released the Lean Enterprise Model, a major reference tool that lists the key elements of lean performance, to a growing number of LAI consortium members [see sidebar accompanying this news release]: 10 U.S. government agencies, 17 aerospace companies, two labor unions, and MIT."

According to Cantrell, the real success of LAI has been measured by the broad base of acceptance and implementation

Lean manufacturing principles and practices — promoted by the Lean Aircraft Initiative, now called the Lean Aerospace Initiative (LAI) — are being used by Air Force and contractor team members to keep costs down and performance up in defense acquisition.



of Lean site visits to consortium members, to include those who have recently joined the effort, Cantrell said.

LAI principles and practices already have been incorporated in a number of pilot demonstration programs at the ASC's Manufacturing Technology Directorate, as well as several of the Center's most prominent programs, including the C-17 System Program Office (SPO) and F-22 Raptor SPO.

Air Force ManTech Efforts

"There are specific investments that ManTech has been making that are directly related to discoveries from the Lean Aircraft Initiative," said Brench Boden, Program Manager in the Industrial Base Pilots Team Office also located here. "They have come from an activity we call the Lean Forum, which involves an annual meeting with LAI companies to discuss good ideas they might have discovered during benchmarking, analysis, and assessment activities — but which are too risky for them to just go out and implement."

When the first Lean Forum was held in Chicago, Ill., in the fall of 1994, a group of the companies had just visited the John Deere Plant in Moline, Ill., according to Boden. "This facility — which is now regarded as one of the leanest factories of its kind in the world — was on everybody's minds when they came to the first Lean Forum," he said. "They wanted to know how they could take what John Deere had learned about lean manufacturing, and apply it to their own defense aerospace activities, while minimizing risk — a 'spin-on' learning process."

ManTech then solicited contract proposals based on the John Deere model — the modular factory — and four contracts were awarded for lean pilot programs. "In fact, the C-17 SPO liked one proposal — dealing with the C-17 Main Landing-Gear Pod — so well they funded it themselves," said Boden, who still serves as technical advisor for this effort.

Boden's group asked three other companies — Lockheed in Marietta, Ga.;

Northrop Grumman in Rolling Meadows, Ill.; and Hughes Missile Systems in Tucson, Ariz. — to emulate the things John Deere had done in creating its modular factory.

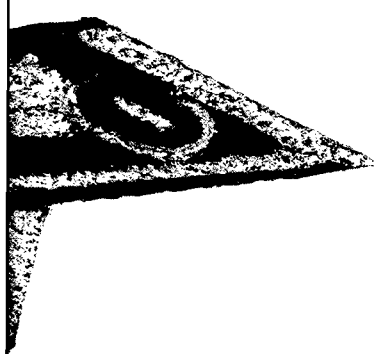
"John Deere reorganized its factory operations into major, subsystem modules, like minifactories," Boden said. "They stacked those all in a line, gave them each their own equipment, operators, and production schedule. Everything now is connected at the final assembly line, where workers install the items they produce in their module, then roll the unit on its own wheels to the next module."

The modular factory approach helped John Deere solve some union problems at the time, by involving the union in everything they did, according to Boden.

"Deere established agreements with suppliers to deliver components to the edge of the assembly line; workers from the floor go to the trucks to help unload items — key things employees don't normally do because of existing union contracts," Boden said. "They convinced the union to go to a productivity incentive plan, whereby employees' productivity and quality were factored into their pay. John Deere proved to employees that if they worked smarter, and were more productive, and had better quality, they would make more money, rather than merely working a lot of overtime."

Under the terms of the ManTech award, Lockheed Martin, prime contractor for the F-22 Raptor, was asked to identify ways to cut system delivery to 24 months, Boden said. "The reality is that the F-22 SPO wants to get to a 24-month production airplane tomorrow. They are very aggressive in dealing with cost and schedule, and what we are doing through Lockheed Martin has great potential to help them achieve that 24-month goal — by reducing lead times, squeezing out the waste, and reducing long-lead supply items, for example."

The third pilot program involved Northrop Grumman's Electronic Warfare Systems Division, which has created a microwave power module (MPM) — a



by consortium members. "During the last two years, a joint Air Force/MIT LAI Evidence of Lean Team has visited member companies to determine how much they have applied lean principles and practices," Cantrell said. "What we have found is impressive."

"Every member company has made significant progress," Cantrell said. "Some have moved farther and faster than others, but all have made conscious decisions to take what they are learning through LAI and put it into practice."

Examples of company successes have included pilot applications in several areas that have shown cost and cycle time reductions on the order of 50 percent, Cantrell explained. "This has strengthened our belief that overall aircraft cost and cycle time reductions of 50 percent are reachable."

This winter, as LAI Phase II continues, there will be another round of Evidence

power-booster — essentially a new technical approach to an old power amplification problem, Boden said. "This module can be used to drive military radars and jammers via microelectronics.

"Because there is a clearly defined need, but limited demand, for this capability, Northrop Grumman put together a single factory cell to produce the microwave power units in very small lot sizes — one or two at a time," Boden said. "They did a pretty slick job of that."

To support the Cooperative Engagement Capability Program, a Navy electronic warfare effort involving datalink systems from the Aegis Cruiser to the E2C Hawkeye, the Northrop effort has since attracted \$200,000 in funding from the Naval Research Lab in Washington, D.C., to offset the cost of producing some

demonstration modules the Service will test soon, according to Boden.

"We have a Memorandum of Understanding being signed by the Space and Naval Warfare Systems Center in San Diego, Calif., to share information on successful applications of this module," Boden said. "We are also working with the Defense Airborne Reconnaissance Office in Washington, D.C., to explore possible use of MPMs on Uninhabited [Unmanned] Aerial Vehicles (UAVs)."

The fourth ManTech demonstration effort involves Hughes Missile Systems, which has several missile workloads in one factory, Boden said. "Through the ManTech project, Hughes has made great strides implementing lean thinking through its Tucson, Ariz., factory. In some of its missile-assembly areas, they've

completely eliminated warehouses, cut floor space in half, reduced inventory by 60 to 70 percent, and cut cycle time by 50 to 60 percent."

In the future, ManTech will look to assist other programs at ASC with affordability concerns, Boden said. "We'll be applying lean principles, and looking for ways to reduce cycle time and costs for these systems."

Editor's Note: This information, published by the Aeronautical Systems Center, Office of Public Affairs (ASC/PAM), Wright-Patterson AFB, Ohio, is in the public domain and may be accessed at <http://www.wpafb.af.mil/ascpa/index.html> on the World Wide Web. Baker is a member of the ASC Office of Public Affairs and may be contacted at (937) 255-2725.

LEAN AEROSPACE INITIATIVE (LAI) CONSORTIUM MEMBERS

Government

Aeronautical Systems Center (ASC)
Air Force Research Laboratory
(Manufacturing Technology Directorate)
C-17 System Program Office (SPO)
F-22 SPO
Joint Strike Fighter Support Office
Army Air Training Command
Defense Logistics Agency
Naval Air Command
U.S. Coast Guard
Defense Advanced Research Projects Agency
National Aeronautics and Space Administration

Industry

AlliedSignal Aerospace
Allison Engine Co.
Applied Materials
Boeing Defense & Space Group
GE Aircraft Engines
Hewlett-Packard
Hughes Aircraft Co.
Litton Industries Inc.
Lockheed Martin (Electronics and Missiles Group)
Northrop Grumman Corp.
Pratt & Whitney
Raytheon Aircraft Corp.

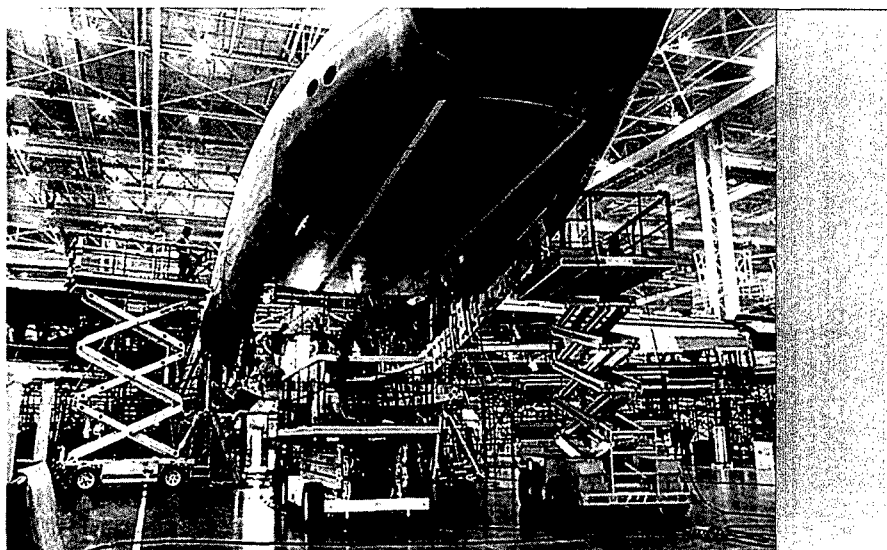
Rockwell International Corp.
Sunstrand Corp.
Raytheon TI Systems Inc.
Textron Systems Div.
TRW Avionics Systems Div.

Labor

International Association of Aerospace
Machinists
United Auto Workers

Academia

Massachusetts Institute of Technology



WRIGHT-PATTERSON AFB,
OHIO, DEC. 1, 1997 — LEAN
MANUFACTURING OF A C-17 PRO-
DUCTION AIRCRAFT CARGO DOOR
AND RAMP, SHOWN HERE DURING
INSTALLATION AT THE McDONNELL
DOUGLAS (NOW BOEING)
CONTRACTOR PRODUCTION FACILITY
IN LONG BEACH, CALIF., IS NOW
PART OF THE CONTRACTOR'S
ROUTINE OPERATIONS.

U.S. Air Force photo

Partnering With Industry Key to Future of Space

PETERSON AIR FORCE BASE, Colo. (AFNS) – Because space is a vital national interest, partnering with commercial and civil agencies is critical if the United States is to reduce launch costs and stay competitive in the global space market.

Lt. Gen. Lance W. Lord, vice commander of Air Force Space Command, made that statement during his keynote address at the Federal Aviation Administration's two-day conference on commercial space transportation in Arlington, Va.

During the opening segment of "Commercial Space Transportation in the 21st Century: Technology and Environment, 2001-2025," the general said evolving space partnerships with other agencies – civil and commercial – will allow America to do far more with limited resources than could otherwise be accomplished.

Partnering with the commercial sector is of the utmost importance to both the military and civil sectors because of several trends impacting the U.S. military, civil, and commercial space sectors, said Lord.

The most significant trend is the overall drop in defense spending. According to the general, the military, civil, and commercial space sectors can partner together and leverage the dollars that are available.

Lord also noted a trend in the shifting of space leadership from government to industry. Over the past five decades, the military and NASA [National Aeronautics and Space Administration] served as the catalyst driving the initial development of space. Just as commercial exploitation followed the military's use of the airplane, so goes the way of space systems, he said.

The general said he believes partnering with industry will help America retain a technological edge in the rapidly changing space arena, while preventing the rapid dissemination of key military-relevant technologies across the globe. These efforts will also lead to domination of the global space access market through a reduction of launch costs.

Space transportation today is similar to air transportation in the 1920s and 30s. As passenger flights became more routine, reliable, and safe, the number of flights rose and the cost per flight decreased. It is the old law of volume discounts. This is inevitable with space transportation also, he said.

Editor's Note: This news release, courtesy of the Air Force Space Command News Service, is in the public domain and may be accessed at <http://www.af.mil/news> on the World Wide Web.

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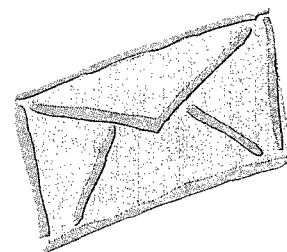
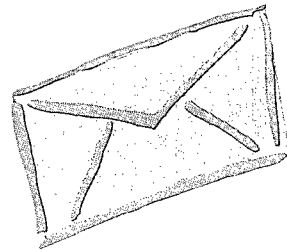
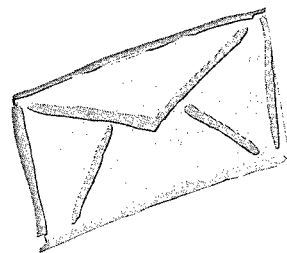
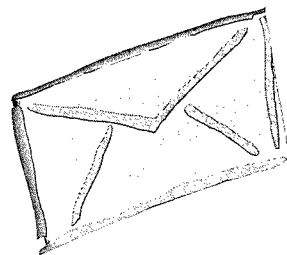
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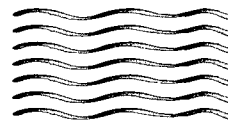
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Why DoD Contractors File Protests

...And Why Some Don't

STEVE ROEMERMAN

As part of an acquisition reform study, the author conducted an informal, unscientific poll of defense executives, asking the question, "Why do DoD contractors file protests?" This article is a summary of the results of those conversations.

Why Are Protests Filed?

The following list of reasons is roughly rank-ordered, with the most frequent responses appearing first.

Contractor's decision maker expects to win. Most respondents pointed out that this is a false expectation, but the decision maker is often too low in the organization to have seasoned judgment, too emotionally close to the bid to accept the possibility of having made an inferior offer, or just uninformed on the basis for which a successful protest can be filed.

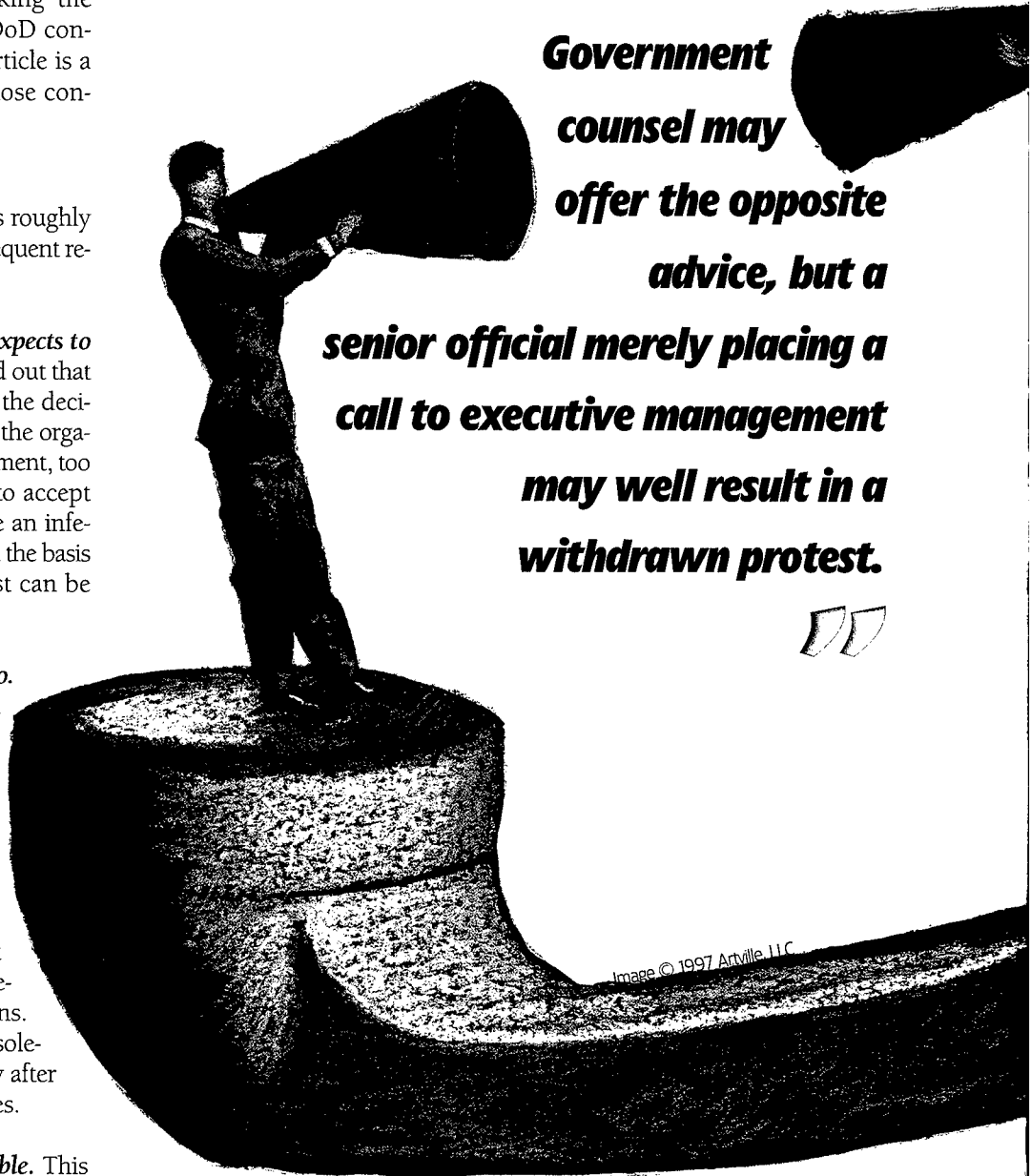
Expectation of a quid pro quo.

The contractor does not expect to win per se, but does expect to make some strong points, and negotiate a side agreement. No contractor was willing to make this assertion on the record, and no respondent claimed to have been involved in such an arrangement. But many claimed that their competition had made such assertions. Examples cited were directed sole-source awards to losers shortly after a protest, and similar anecdotes.

Prove we did everything possible. This "proof" can be aimed at demonstrating

If a protest is filed, don't shut down communications.

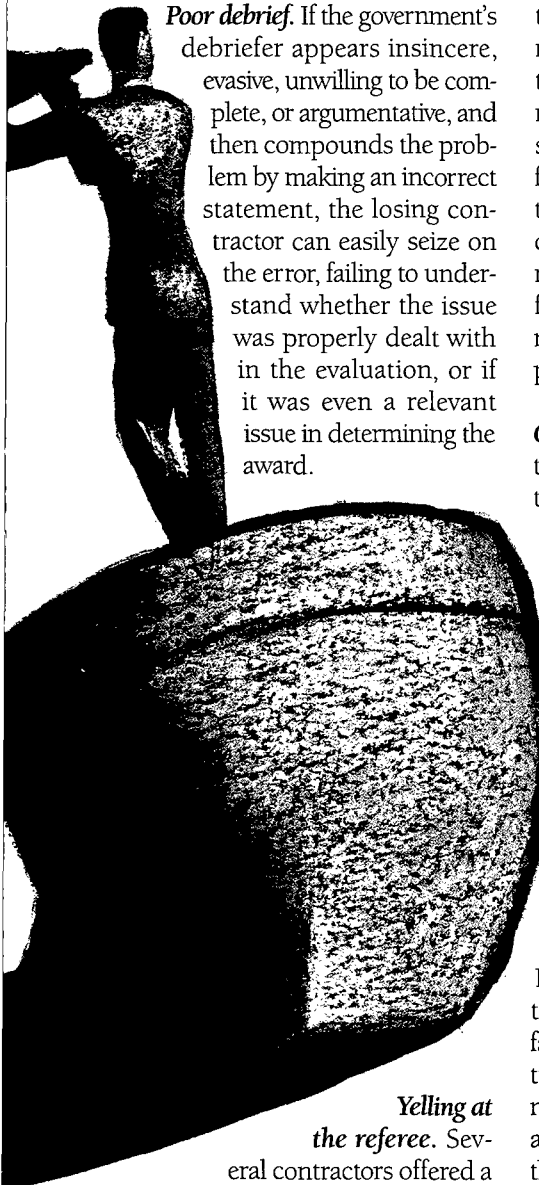
Government counsel may offer the opposite advice, but a senior official merely placing a call to executive management may well result in a withdrawn protest.



Roerman is Vice President and Manager, Business Development, Raytheon TI Systems, Inc., Lewisville, Texas.

resolve for the board, for executive management, or it can be the senior ranks "proving we back up our troops." This viewpoint took the position that protest was the legal right of the contractor, and even though the odds were long, it was the contractor's choice under the "rules of the game."

Confusion over award criteria. If the losing contractor misunderstood the government's selection criteria, it is a short step to filing a protest.



Poor debrief. If the government's debriefer appears insincere, evasive, unwilling to be complete, or argumentative, and then compounds the problem by making an incorrect statement, the losing contractor can easily seize on the error, failing to understand whether the issue was properly dealt with in the evaluation, or if it was even a relevant issue in determining the award.

offered by a contractor who said, "When I yell at the referee, I don't really expect him or her to change their call, but I do think the next play will be looked at from my point of view."

Delay the award or program. For a number of reasons, it may seem to be in the loser's best tactical or strategic business interests to delay the award. These reasons may involve older programs, funding, and several other issues.

Hurt the winner. If competition between the winner and loser is intense, the loser may file a protest to hurt the winner. If the winner is vulnerable because of a need to assign workers, the need to show signed contracts to investors, and so forth, the loser may be tempted to use the protest process. The aims may include raising questions about the winner's reputation, damage to the winner's financial position, or damaging the winner's ability to execute the contract as proposed.

Obtain competitive intelligence. Even though "clean teams" are usually set up to avoid transfer of proprietary information, some losers may feel the protest process can give them insight, just by virtue of the kinds of data that become relevant as the protest proceeds.

The government really does make mistakes. Sometimes a contractor is vindicated and made whole. Most respondents said they could not think of an example involving a major contract, however.

Environmental Influences

In the process of conducting these interviews, the author noted a number of factors that seemed to make the potential of a protest more likely. These are not reasons contractors file protests, but are environmental conditions that make the filing of protests more likely.

No new procurements in sight. If the awarding command, Program Executive Officer (PEO), or contractor have no expectation of additional opportunities for business in the foreseeable future, the

contractor can easily rationalize there is little to lose, even if the protest is poorly founded.

Marketplace decline, industry consolidation. These environmental factors can make the contractor more prone to desperate moves.

New procurement or competitive factors. If the government uses new acquisition techniques, or if there are new winning competitors in a marketplace, these changes increase the likelihood of protest.

Poor government communications. If award criteria is poorly understood, if the debrief is delayed without explanation, if the contracting officer missteps, or if a myriad of other communications problems happen, the contractor can be led to assume the government has something to hide.

Poor legal advice from the contractor's retained counsel. In-house attorneys are loathe to file protests, since they generally expect to be on the job when the protest is settled, and in almost all cases, the contractor loses. Moreover, the in-house lawyer may have some knowledge of the bidding department's weakness.

On the other hand, retained counsel generates legal fees by urging the contractor to have his or her day in court. If this advice is offered without proper review of the case (and deadlines for protest filing almost assure proper review is impossible), it is very hard for even ethical counselors to strongly urge the contractor not to file.

The retained counsel sometimes suggests filing before the deadline to keep the contractor's options open, but this often creates momentum for a full-blown protest, since there are few graceful ways to back down.

Government spends too much time and effort trying to prevent a protest. Ironically, contractors sometimes feel a government program manager who talks a lot about preventing a protest must be planning to do something that warrants

Yelling at the referee.

Several contractors offered a view that a protest changes the next competition. Some offered very diplomatic, polished explanations involving the desire to change flawed award criteria or policy. However, perhaps the most basic explanation of this concept was

one. Attempts to prevent protests by asking bidders to pledge no protests, debriefs that are aimed at proving to the losers what poor proposals they wrote, and similar tactics seem to provoke protests, not prevent them.

What About Those Who Never File Protests?

This poll naturally led to a follow-on poll asking, "Why do some people never [or almost never] file protests?" This was also an ad hoc, unscientific set of conversations. It led to a list of seven reasons offered:

No one ever wins. The most common reason cited was that the odds are so bad, protesting is a waste of time, money, and important corporate talent.

Cost. The general view was that "only the lawyers really win." Even small protests can eat up the potential profit of a contract. Usually the protester will have to take on the legal teams from the government and from the winner.

Yelling at the referee. In contrast to those who felt that procurement authorities tended to "remember and be more careful" as a reason to protest, the same reasons were offered by those who felt this would lead to punitive actions.

Extending the embarrassment and pain. Some people felt that even a winnable protest was not worth sustaining a negative dialogue.

Believe we lost fair and square, even if we made bad choices about what to offer. This was usually offered after a good debrief. Contractors may miss the mark and make an offer that misses the intent of the acquisition organization. When a good debrief leads them to understand why they lost, contractors still don't like losing, but generally don't protest.

Believe the government made a mistake, but.... Contractors finished this sentence with, "It all averages out." Or, "Customers have the right to be wrong sometimes too."

Believe the customer has the right to do business with who he or she chooses, even

**"The government
need not prove
anyone submitted
a bad proposal —
only that the
winner submitted
the best."**



with public money. As long as no illicit behavior is suspected, some contractors felt that even if the General Accounting Office might uphold a protest, the procurement authority needed to have some latitude not strictly supported by the protest guidelines.

Government Actions to Allay Protests

Taken together, the preceding three groups of factors and responses suggest the following five actions the government might take to reduce the number of protests filed.

Communicate the long odds and downside of protest filing. Some PEOs do this, and most senior defense executives know the facts, but many lower-level managers do not.

Communicate the selection factors prior to proposal submittal, and if they are largely subjective, admit it.

If the environment is changing, discuss the changes with prospective bidders.

Manage and meet expectations...especially in debriefing. State the time expected for debriefs when the proposals are received or sooner. Don't let the time needed to prepare a debrief seem suspicious. Don't aim debriefs at preventing protests, but rather at the merits and lack of merit of the bids. The government need not prove anyone submitted a bad proposal — only that the winner submitted the best.

If a protest is filed, don't shut down communications. Government counsel may offer the opposite advice, but a senior official merely placing a call to executive management may well result in a withdrawn protest. The government need not take a particular position, but need only ask if the executive knows a protest has been filed, or if there is some information the government could offer to help the contractor withdraw the protest. In any event, the government should do nothing to add to a climate of suspicion.

A Few Caveats

Some caveats are appropriate. Most managers and executives interviewed spoke on the strict condition of anonymity, and offered unstructured comments. There was no formal survey instrument, and no contemporaneous notes. No single respondent offered all the reasons cited.

The organization of the information, and the information itself, are strongly biased by impressions the author formed during informal conversations. These impressions reflect protests involving DoD ACAT II or larger acquisitions. The author had very limited exposure to smaller contracts, service contracts, and Indefinite Period-Indefinite Quantity (IDIQ) efforts. The impression from these few conversations was protests in these other types of acquisition take on a different nature. This area is a fertile topic for a DoD-industry study, perhaps conducted by DSMC or the National Defense Industrial Association.

A final caveat. The author has never been party to filing a protest, and has no plans to do so in the foreseeable future.



DoD Awards \$174 Million in for Science and Engineering Research Training

The Acting Director of Defense Research and Engineering George Singley today announced plans to make 128 awards to 64 academic institutions to support graduate student training in science and engineering fields important to national defense.

Subject to the successful completion of negotiations between the Department of Defense (DoD) and the academic institutions, the awards will provide support for three years to 141 students pursuing advanced degrees. Individual awards are expected to average \$136,000 over the three-year period.

The awards are being made under DoD's Augmentation Awards for Science and Engineering Research Training (AASERT) program. The AASERT awards are made to professors who perform research under DoD contracts or grants, and who compete for additional AASERT funding. These awards enable each professor to award graduate research traineeships to one or two U.S. citizens. Each traineeship supports tuition, living expenses, and research expenses (materials, shop services, and computer time among others) connected with the graduate student's thesis research.

In addition to supporting graduate students, the AASERT awards will involve more than 50 undergraduate students engaged in DoD-sponsored university research projects. That involvement is designed to stimulate interest in advanced science or engineering studies.

Today's announcement is the result of the Fiscal Year 1998 merit competition for AASERT funding conducted by the Army Research Office, Office of Naval Research, Air Force Office of Scientific Research, and Science and Technology Directorate of the Ballistic Missile Defense Organization. The DoD research offices solicited AASERT proposals from university researchers currently performing DoD research, and invited researchers without current DoD support to submit proposals for both DoD research funding and AASERT augmentation. The research offices received 723 proposals requesting more than \$130 million for research training.

*The awards are
being made
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Augmentation
Awards for
Science and
Engineering
Research Training
(AASERT)
program.*

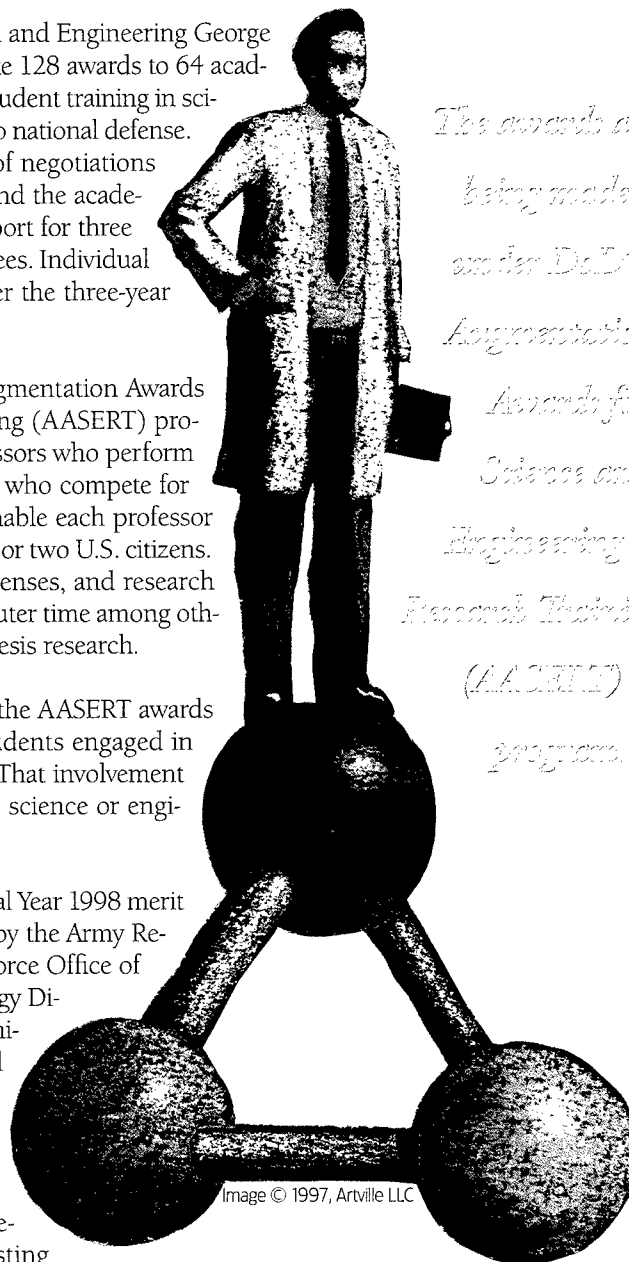


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Editor's Note: This information is in the public domain. For a complete listing of award recipients, access the DefenseLINK News Home Page at <http://www.defenselink.mil/news> on the World Wide Web.

Defense Logistics Agency Capitalizes on Technology

PAUL STONE

FORT BELVOIR, Va. — "It's not your father's Oldsmobile. It's a Corvette or some other high-speed vehicle."

That's how Army Lt. Gen. Henry T. Glisson, director of the Defense Logistics Agency, describes the agency's transformation from a paperwork-based system to one capitalizing on existing and emerging information-based technologies.

The effort — and it has been substantial — has paid off.

The agency was featured in Defense Secretary William Cohen's November 1997 Defense Reform Initiative as an example of how to do business effectively and efficiently. Cohen credited the agency with saving taxpayers \$285 million in administrative costs, reducing expensive warehousing, and creating an Internet-based commerce system to reduce future costs and improve customer service.

Additionally, Vice President Al Gore featured the agency in the October 1997 National Performance Review. Its Defense Distribution Region East in New Cumberland, Pa., was credited for working with private industry to improve government standards for delivery and overall customer service. The Defense Personnel Support Center in Philadelphia received high praise for improving delivery of medical supplies and cutting costs by \$680 million.

These accolades are the result of more than a decade of hard work and innovation, Glisson said.

"We started on this journey 10 years ago when we first started using electronic commerce, particularly using electronic data interchange for most of our procurements," he said. "Over time, through some prototyping we did, we really saw the art of the possible. It allowed us to partner with industry to sort of capitalize on what industry was doing, adopt those commercial practices and bring those into government. As the Internet has exploded, we've been able to migrate along with industry — to leverage that capability to lower cost to the customers and provide a better service."

As a result of this "journey," agencies and offices which historically used what seemed like an endless stream of paperwork are now using commercial Visa cards, known in government as IMPAC [International Merchant Purchase Authorization Cards] cards, for purchases under \$2,500. DoD offices use them to buy everything from office supplies, tools, equipment, magazine subscriptions, and a host of services.

The Defense Reform Initiative calls for 90 percent of all small purchases to be made using IMPAC cards — a goal which Glisson believes will be met easily.

"I think you'll see people will exceed that 90 percent. I think we'll be in the high 90s before all is said and done," he said, adding the Army is already using IMPAC for 80 percent of its small purchases.

Another cost-saving program highlighted in the Defense Reform Initiative is Prime Vendor contracting. Through this program, DLA awards contracts to vendors to provide goods and services as needed. Previously, the agency stockpiled goods for long periods in expensive warehouses.

For example, the Subsistence Prime Vendor Program provides food for military garrisons. Initiated in 1995, customers now receive direct shipments from vendors in 24 to 48 hours, resulting in fresher, brand-name products. Installations have been able to reduce or shut down cold- and dry-storage facilities. Glisson said savings have been dramatic — the agency puts them at \$250 million by 2000.

The Medical Prime Vendor Program, begun in 1993, provides a variety of pharmaceuticals or medical/surgical items for geographically clustered groups of customers. The contract requires 24-hour delivery as well as electronic invoicing, billing, and payment. This program has slashed ad-

ministrative costs, reduced inventory supplies from 60 to about 27 days, and saved taxpayers about \$88.5 million.

Glisson calls Prime Vendor contracting a win-win situation because it eliminates the middle bureaucracy and puts customers directly in touch with vendors. It also stimulates market competition, resulting in better prices and services for DoD.

"It gets us out of the old look that we had — of warehouses full of stuff, and people always asking, 'Why are you stocking it when it's available on the commercial market?'" Glisson said.

The Defense Logistics Agency's increased use of technology doesn't begin to compare to the possibilities created by the agency's electronic mall, or EMall.

Begun in 1997, the agency's EMall provides one-stop shopping for DoD customers. It blends the best of Internet-based shopping with the benefits already provided by use of IMPAC cards and the Prime Vendor Program. EMall links them into a system that will eventually benefit all DoD customers.

This month, EMall begins offering an integrated search capability with a single online registration and ordering process. Customers will be able to order more than 4 million different agency-managed items and hundreds of thousands of commercial items from vendor catalogs, corporate contracts, and the Navy's information management technology catalog.

Shoppers will be able to look for the best value, comparing quality, prices, and availability, just as they do when doing personal shopping on the Internet. Preliminary estimates of net savings to the government are in the tens of millions of dollars annually.

"It has great potential," Glisson said. "Not only will customers be able to do competitive shopping, they will be able to choose delivery time and track the status of the purchases."

The system has the potential to reach all levels. An office manager or motor pool officer will likely be able to avoid contracting processes by using EMall — buying items directly with all the conditions and discounts pre-negotiated and paying for them with IMPAC cards. DoD will save millions in processing costs and vendors will receive on-the-spot payment.

The EMall is accessible through the agency's website address: <http://www.supply.dla.mil>

While agency procurement and payment programs have benefits in their own right, their collective bottom line is readiness, Glisson said. Because these programs reduce operating, purchasing, and warehousing costs, they free up funds for modernization and training.

Indeed, as Glisson is proud to point out, his agency's link to the warfighter has become stronger. "We've become an integral part of the warfighting team," he said. "Today, we provide 100 percent of all the food, all of the clothing, all the medical supplies, all the fuel, for all the Services. We provide 83 percent of all the spare parts. So we've become linked to them in a way that we never would have imagined five years ago, and I think that's going to become even stronger in the next five years."

DLA deploys with its customers through contingency support teams, such as those now in Bosnia. The agency sets up sites that manage supply support and administer contracts.

Glisson envisions the day when warfighters will track their goods all the way from the manufacturer to their units, ships, or aircraft, and be able to redirect supplies as needed during the process. Deploying units will need to take less with them because they will know they can get resupplied quickly and reliably through the systems now entering service and others being developed.

He believes the Defense Reform Initiative's emphasis on a paperless workplace will help make this vision reality. By creating what he characterized as an "environment and culture change," Glisson said reform [initiatives have] given the Defense Logistics Agency a needed boost. This will move the agency rapidly toward its goal of a purely electronic procurement and supply system — one which increasingly improves customer service while contributing to readiness.

Editor's Note: This information is in the public domain and may be accessed at <http://www.dtic.mil/afps/news> on the World Wide Web.



Title

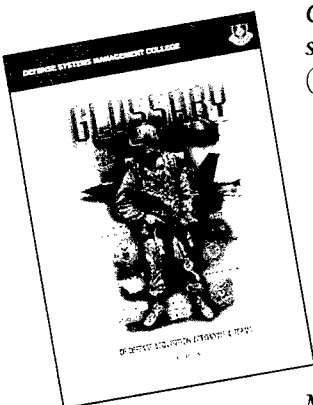
Acquisition Logistics Guide
(December 1997).

Content

Learn concepts and techniques of logistics management, including applications for programming, budgeting, and contracting; test and evaluation; program support; and international, non-major, and Joint programs.

Source

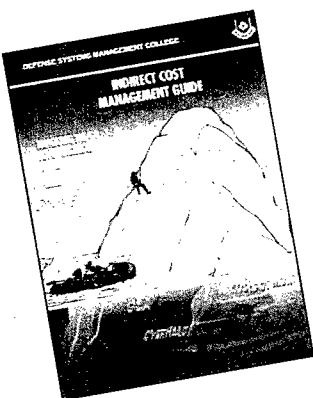
Available now via the DSMC Home Page and DSMC Distribution Center; Government Printing Office (cite **GPO 008-020-1436-2-\$29.00**); Defense Technical Information Center and National Technical Information Service (cite **ADA-332-714**).



Glossary of Defense Acquisition Acronyms and Terms
(May 1997)

Get your up-to-date reference of acronyms, abbreviations, and terms commonly used in the Department of Defense (DoD) weapon systems acquisition process. This glossary is particularly useful for DoD industry personnel who need a generic as well as Service-unique reference.

Available now via the DSMC Home Page and Distribution Center; Government Printing Office (cite **GPO-008-020-14425-7-\$14.00**); Defense Technical Information Center and National Technical Information Service (cite **ADA-328-573**).



Indirect Cost Management Guide (1997)

Management in DoD is increasingly concerned with broad-based increases in defense contractor indirect cost rates. The major factor is significant reduction in the business base for most defense contractors, because of the declining defense budget. DoD has expanded efforts to strengthen monitoring of indirect costs. This guide demystifies what many refer to as the "sea of overhead," and provides a complete overview of indirect cost management.

Available now via the DSMC Home Page and Distribution Center; Government Printing Office (cite **GPO 008-020-01424-9-\$10.00**); Defense Technical Information Center and National Technical Information Service (cite **ADA-293-579**).

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Government Printing Office (GPO)

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THE DEFENSE ACQUISITION WORKFORCE!

OF THE FOLLOWING GOVERNMENT SOURCES:

Title

Content

Source

Program Manager's Tool Kit (1997)

Containing a graphic summary of acquisition policies and managerial skills required by DoD program managers, this updated version was first developed by a Program Management Course 92-1 student to fit in a small "Day Timer." Material is from current Intermediate Systems Acquisition Course and the Advanced Program Management Course materials. This summary is intended as a guide only, and should not be used as a substitute for official policy.

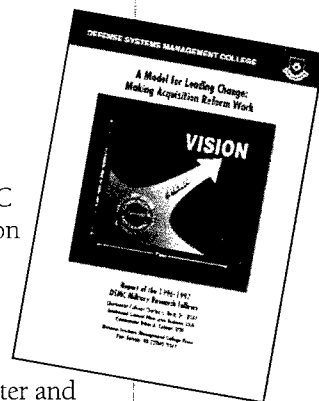
Available now, but only through the DSMC Visual Arts and Press Department. Fax requests to (703) 805-2917, DSN 655-2917.



Research Fellows Report - "A Model for Leading Change: Making Acquisition Reform Work" (1997)

The report identifies paths for the leadership of the DoD acquisition workforce to follow for implementing acquisition reform. As a primer for improving organizations, the model includes lessons-learned from the perspective of implementing change, using the latest DoD efforts as examples, and addresses what DoD can do to change.

Available now via the DSMC Home Page and Distribution Center; the Government Printing Office (cite **GPO 008-020-01437-1-\$9.00**); and soon from the Defense Technical Information Center and the National Technical Information Service (ADA to be announced).



DSMC Press Publications for the Defense Acquisition Workforce (December 1997)

Newly revised and updated, this free brochure is yours by faxing the DSMC Press. The brochure lists the publications offered by and through the College, including titles, abstracts, prices, sources, and reference numbers.

Available now, but only through the DSMC Visual Arts and Press Department and the DSMC Distribution Center.



OF THE FOLLOWING GOVERNMENT SOURCES:

Defense Technical Information Center (DTIC)

DTIC will sell copies (on microfiche and hard copy made from microfiche) to government and industry subscribers. Cite the title and appropriate DTIC ADA number and address requests to **DTIC, 8725 John J. Kingman Road, Attn: DTIC BR, Suite 0944, Fort Belvoir, VA 22060-6218**. For further information, contact DTIC at (703) 767-8274; DSN 427-8274.

National Technical Information Service (NTIS)

All DSMC publications available from DTIC will also be available to the general public through NTIS (on microfiche and hard copy made from microfiche). Use the DTIC ADA number and address requests to **NTIS, 5284 Port Royal Road, Springfield, VA 22161**. For further information, contact NTIS at (703) 487-4650.

DSMC Home Page

Those with Internet access may download and print a PDF file of select DSMC publications from DSMC's Home Page at <http://www.dsmc.dsm.mil> on the World Wide Web.



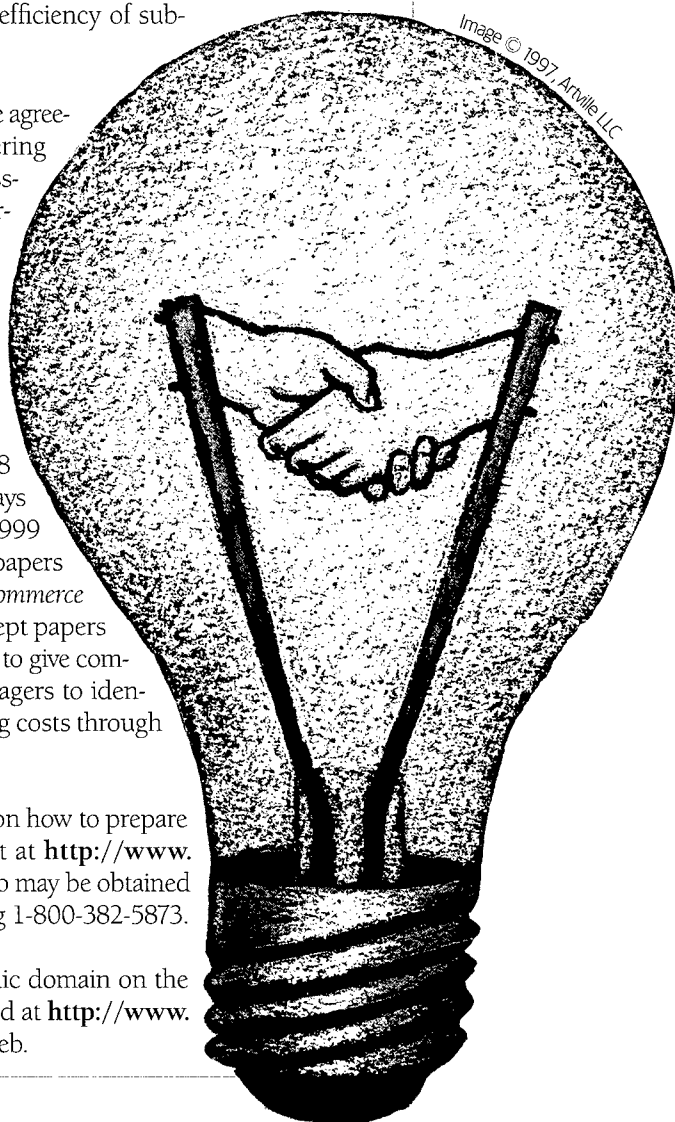
As part of its focus on finding ways to reduce operating and support costs, the Department of Defense recently issued a call for concept papers from firms with ideas for inserting commercial technologies into fielded military equipment under the Commercial Operations and Support Savings Initiative (COSSI). Started in 1997, COSSI seeks to reduce operating and support costs by leveraging innovative commercial technologies that will result in reducing the costs of parts and maintenance, decreasing the need for specialized equipment and increasing the reliability and efficiency of sub-systems.

In Fiscal Year 1997, COSSI awarded 30 stage one agreements for cost-shared non-recurring engineering and qualification testing projects. After successful completion of the testing, the military services fund a stage two procurement of commercially based retrofit kits to reduce operating costs for specific fielded weapon systems. The estimated 10-year savings from this competition is \$3 billion, on the Department's investment of \$100 million.

Although there will not be a Fiscal Year 1998 COSSI project solicitation, DoD is seeking ways to identify innovative ideas for the Fiscal Year 1999 program. Toward this effort, a call for concept papers was announced in the Dec. 15, 1997, issue of *Commerce Business Daily*. The response date for the concept papers has been extended to March 17, 1998, in order to give companies more time to work with program managers to identify system cost drivers and seek ways of cutting costs through insertion of commercial items.

Additional information on COSSI and details on how to prepare concept papers are available on the Internet at <http://www.darpa.mil/jdupo/index.html>. Information also may be obtained by E-mail at cosi@acq.osd.mil and by calling 1-800-382-5873.

Editor's Note: This information is in the public domain on the DefenseLINK Home Page and may be accessed at <http://www.defenselink.mil/news> on the World Wide Web.



ACQ 201 Equivalency Examination

Back by Popular Demand...

Under the auspices of the Defense Acquisition Workforce Improvement Act (DAWIA), Defense Systems Management College (DSMC) course directors have administered over 20 Intermediate Systems Acquisition Course (ISAC) equivalency examinations since 1994 to DoD personnel seeking course validation. ISAC, or ACQ 201, is a certified Defense Acquisition University (DAU) Level II course offering, which meets mandatory or desired training requirements for DAWIA certification in six of 11 acquisition career fields. Over 300 members of the acquisition workforce have passed the exam.

In Fiscal Year 1998 (FY 98), ACQ 201 equivalency exams will be offered at the main Fort Belvoir, Va., campus as well as our four DSMC Regional Centers. Equivalency examinations consist of two parts and are conducted over a two-day period. On the morning of Day 1, the on-site director fields questions from the examinees. In the afternoon, examinees complete Part I of the examination, consisting of 100 multiple-choice questions. At the end of Day 1, course directors post test scores; those examinees receiving a passing score of 70 percent may return on Day 2 for Part II. Part II begins on the morning of Day 2 and consists of 10 from a choice of 12 essay-type questions.

Part II will be collected on-site and mailed to the School of Program Management Division, Core Systems Acquisition Department (SPMD/CSAD). SPMD/CSAD, located at DSMC's main campus, will grade the essay portion and award diplomas to those who achieve a 70 percent or above passing score.

Please note that a nominal number of textbooks are available at the DSMC Regional Centers for study and preparation prior to the examination. If you are interested in taking the ACQ 201 equivalency examination, please first contact your agency's on-site training and education coordinator, who will then coordinate your participation in the examination with the appropriate ACQ 201 course director/DSMC Regional Center director.

The ACQ 201 Equivalency Examination Schedule for FY 98 follows:

ACQ 201 Equivalency Examination Schedule for FY 98

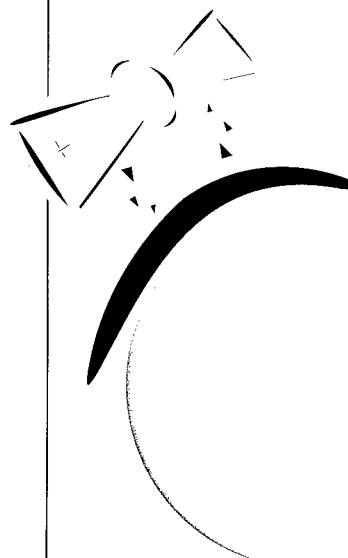
Date	Location	Region
April, 1998	Los Angeles, Calif.	Western Region Comm: (310) 363-8716 DSN: 833-8716
May, 1998	Fort Belvoir, Va.	DSMC Main Campus Comm: (703) 805-4987 DSN: 655-4987
June, 1998	Boston, Mass.	Eastern Region Comm: (871) 377-3593 DSN: 788-9045
August, 1998	Huntsville, Ala.	Southern Region Comm: (205) 842-9045 DSN: 788-9045
September, 1998	Fort Monmouth, N.J.	Mid-Atlantic Region Comm: (908) 532-5122 DSN: 992-5122

Should you have any further questions, please contact Air Force Maj. Art Greenlee, SPMD/CSAD:

Commercial: (703) 805-4987
DSN: 655-4987
E-mail: greenlee_arthur@dsmc.dsm.mil

ACQUISITION REFORM SATELLITE BROADCASTS — FY 98

DATE	TOPIC
May 27, 1998	Deskbook
June 11, 1998	Information Technology
June 18, 1998	Contract Pricing — Volume 2



The Defense Acquisition University's Home Page on the World Wide Web offers further information on Acquisition Reform Satellite Broadcasts. Access <http://www.acq.osd.mil/daui/arcc/> for the title of each broadcast, time, frequency, description, technical specifications, broadcast support document, and broadcast evaluation document. Users can also call the Acquisition Reform Communications Center for the latest information on Acquisition Reform Satellite Broadcasts: **1-888-747-ARCC (Toll Free)**.

Training and Test Ranges — A 21st Century Partnership

DR. PATRICIA SANDERS

Editor's Note: The following excerpt from *Defense Issues*, Volume 12, No. 57, published by the American Forces Information Service, presents remarks by Dr. Patricia Sanders, Director, Test, Systems Engineering and Evaluation, Office of the Under Secretary of Defense for Acquisition and Technology. Sanders spoke at the National Training Systems Association and International Test and Evaluation Association Workshop, Norfolk, Va., Nov. 18, 1997.

This information is in the public domain and may be accessed from the Internet at http://www.dtic.mil/defenseink/pubs/di_index.html on the World Wide Web. (Parenthetical entries are speaker/ author notes; bracketed entries are editorial notes.)

ALL OF THE PROGRESS OF CIVILIZATION IS DUE TO THE CONTRIBUTIONS OF PEOPLE. THE RECORD OF HISTORY IS BRILLIANT WITH THE DEEDS OF MEN AND WOMEN WHO SAID, "I CAN," WHILE IT IS SILENT FOR THE MOST PART CONCERNING THOSE WHO SAID, "I CAN'T." POSITIVE PEOPLE BELIEVE THAT IT IS BETTER TO FAIL IN CARRYING ON A PROJECT THAN NOT FAIL BECAUSE THEY HAVE NOT TRIED. I BELIEVE I KNOW THIS COMMUNITY [TEST AND TRAINING] WELL ENOUGH TO KNOW THAT IT IS POPULATED BY PEOPLE WHO SAY "I CAN."



—Dr. Patricia Sanders

Director, Test, Systems
Engineering and Evaluation
OUSD(A&T)

I would like to thank the National Training Systems Association and the International Test and Evaluation Association for the invitation to speak. Both of these organizations are fundamental in their role of providing a forum for dialogue on important issues facing our professions today.

And the theme of this workshop, "Training and Test Ranges: A Partnership for the 21st Century," is right on. Many of you heard me speak about partnerships at this year's ITEA Symposium in Orlando [Fla.], so you know how strongly I feel about the importance of partnering for our future. Let me focus your thoughts on three aspects of partnerships that I believe to be applicable to a joint venture between the test and training ranges.

About Partnerships

And to do so, I will recall three quotes from my grandfathers — the source of most of my early wisdom. Some people learned everything they needed to learn in kindergarten, but growing up in a large, extended family, I learned most everything I needed to learn from my grandparents. And the three things I remember them telling me about partners are these:

- Cooperation is everything. Freckles would make a nice coat of tan if they'd get together.
- When two partners in business always agree, one of them is unnecessary,
- The fellow who wants you to play ball with him generally wants you to do the catching.

Now let me explain why I think these grandfatherly words of wisdom apply to our test and training communities. I would contend that —

- The challenges facing us today are sufficiently large that we must cooperate if we hope to successfully meet them.
- ...Our strength lies not only in our common areas — the ways in which we are alike — but also in our differences and the ways in which test and training complement each other.
- ...A partnership that is not based on mutual benefit is doomed from the beginning.

It's not like we don't have mutual challenges to wrestle with in the test and training communities. Just in case anyone here has not recognized the formidable task facing the Department of Defense today, let me describe it.

Reductions, Deterrence, Readiness

Since the Berlin Wall came down and as a result of perceived diminished threat,

we have been able to reduce our active force by some 700,000 people — about a third of our active military. To put it in perspective, the 700,000 we cut is more than the number of troops in the British, the German, the Dutch, and the Danish armed forces together.

Or put another way, the force we cut is 200,000 people more than all the autoworkers in the United States. This reduction gave the American people a considerable peace dividend, because it allowed us to reduce our defense budget by nearly 40 percent. As a result, right now we spend less of a percentage of our national wealth on defense than any time since before World War II.

And with lots of hard work, we have managed this huge drawdown and created a significantly smaller, but pound for pound, an even more capable, ready force. And it's a good thing we did, because in the wake of the Cold War came not peace and stability, but ethnic and religious conflicts, failed states, widespread instability, humanitarian disasters, and that old standby, naked aggression.

As a result, over the past four years our armed forces have been asked to engage in over 40 separate operations around the globe. While some of these were small-scale operations, others like Bosnia have been quite significant. On any given day, the United States has about 40,000 soldiers, sailors, airmen, and Marines deployed on operations in support of our global interests. This is in addition to the 200,000 troops that we have permanently stationed overseas.

And in Bosnia, as in every other military operation these past years, our military forces have performed superbly. Whether maintaining a strong deterrent against aggression on the Korean Peninsula, ensuring that Saddam Hussein knows the penalty for turning his military against his neighbors or his own people, rescuing our citizens in places like Albania or in faraway Africa, providing humanitarian assistance in Rwanda, bringing an



**Cooperation is
everything.
Freckles would
make a nice coat
of tan if they'd
get together.**

end to violence in Haiti, or extending the hand of friendship to former adversaries and new partners through NATO's Partnership for Peace, there is no doubt about the magnificent performance of our men and women in uniform.

But this does not imply that everything is perfect or that it ever was. America entrusts its military and civilian leaders with the lives of its sons and daughters, who are the ultimate source of our operational excellence.

We are committed to giving them a fair and decent environment in which to protect American interests wherever they might be challenged. And that's why readiness must be of great concern to all of us: *today's* readiness — training's emphasis; and *tomorrow's* readiness — the focus of our acquisition and testing. And

the first step in maintaining readiness in the future is to assess, as best we can, what the future will look like.

Masters of Any Situation

This is exactly what we did in the Quadrennial Defense Review that we completed last spring. Out to the year 2010, our forces in the field will likely face a wide range of threats, from terrorists to rogue states equipped with weapons of mass destruction to potent regional powers. And beyond that period, we may even face a peer competitor — another power with the resources to challenge us on a global scale.

In such a world, with our considerably smaller forces, we must remain ready for threats to our interests and be prepared on short notice to execute a wide range of tasks, from assisting with humanitarian disasters here and abroad, to peacekeeping, to the most challenging regional conflicts. But first and foremost, our forces must remain ready, manned, and equipped to fight to win our nation's wars.

Our work on the QDR followed a path that led from threat to strategy to implementation, and finally to resource issues. We recognized that the world continues to change rapidly, and we cannot expect to comprehend fully or predict the challenges that might emerge from the world beyond the time lines covered in normal defense planning and budgets. Our strategy accepts such uncertainties and will prepare our armed forces to deal with them.

Our approach retains sufficient force structure to sustain American global leadership and meet the full range of today's requirements. At the same time, it invests in the future force with a focused modernization plan that embraces the Revolution in Military Affairs and introduces new systems and technologies at the right pace. It places much greater emphasis on the need to prepare now for the future, in which hostile and potentially hostile states will acquire new capabilities.

The programs we are undertaking now to exploit the potential of information technologies and leverage other advancing technological opportunities will transform warfighting. *We want our men and women to be the masters of any situation. In combat, we do not want a fair fight – we want capabilities that will give us a decisive advantage.*

Joint Vision 2010 describes four new operational concepts. Together, they promise significant advantages in any operational environment, something we call “full-spectrum dominance.”

Dominant maneuver employs a full picture of the battlefield, advanced mobility platforms, and agile organizations to be able to attack enemy weak points directly throughout the full depth of the battlefield.

Precision engagement delivers the desired effects at the right time and place on any target.

Full-dimensional protection provides multiple layers of protection for U.S. forces and facilities at all levels [and] will enable U.S. forces to maintain freedom of action during deployment, maneuver, and engagement.

Focused logistics fuses information, logistics and transportation technologies, [and] U.S. forces to deliver the right support at the right place on the battlefield at the right time.

In sum, we will continue to seek the best people our nation can offer, and equip them with the best technology our scientists and engineers can produce.

But Can We Afford It?

Perhaps the most difficult element of the way ahead is that our program must be fiscally executable. For the past several years, our defense program has suffered from unrealized expectations with regard to modernization. Therefore, an important corollary to the strategy and force choices in the QDR was a focus on balancing our overall defense program, improving stability within that program, and fixing deficiencies within Service

and Defense-wide budgets in order to ensure that modernization targets are met.

We require increased and stable investment in modernization in order to exploit the revolution in technology and transform the force toward *Joint Vision 2010*. We must fundamentally re-engineer our infrastructure and streamline our support structures by taking advantage of the Revolution in Business Affairs that has occurred in the commercial world. We must focus on the future and not on the past. Only through such efforts can we realize the cost efficiencies necessary to recapitalize the force.

Critical Enablers

The implications of the QDR and *Joint Vision 2010* must be clear for the test and training communities. There are a number of critical enablers that are absolutely essential to our ability to shape the international security environment and respond to the full spectrum of crises. Those that are of particular importance and concern to us are:

- Quality people, superbly led – our most critical asset. Our soldiers, sailors, airmen, and Marines are the bedrock of the U.S. military. They will be the deciding factor in all future operations.

Continuously training them to be the best warriors in the world will remain among our top priorities. Advanced joint operational concepts and new technologies will increase the complexity of operations and require new and different skills.

The number of different skills required will also increase as U.S. forces are asked to be increasingly multimission-capable, able to transition from peacetime activities and operations to deterrence to war. In order to maintain proficiency in the wide variety of required missions and tasks in a joint environment, units will need more effective training and careful time management.

Units will be tasked to respond to crises more quickly and conversely, will have less time to prepare. *Joint Vision 2010* calls for all military organizations to become more responsive to contingencies, with less startup time between deployment and employment. Clearly we have a significant joint *training challenge*.

- Technology will need to be developed and tested that can profoundly affect the warrior and leader who will execute 2010 missions. Lightweight materials will enable ground forces to carry more equipment and ammunition, thereby increasing individual and unit firepower.

Vision enhancement technology will continue to improve operations after dark and in poor weather. Rapid advances will be made in the way we collect, communicate, and use information, allowing smaller staffs to perform more functions. Video technology and miniaturization such as video cameras on a chip, combined with navigation and targeting technologies, could provide the capability to fire smart personal weapons and select the specific point of impact while the round is in the air.

Four key technological areas are highlighted in *Joint Vision 2010*: low observable masking technologies, smarter weapons, long-range precision capability, and information technologies – all technologies that were unknown at the time most of our existing test and training capabilities were developed. Clearly, we also have a significant joint *testing challenge*.

We're Reaching Our Goals

The goals set forth in *Joint Vision 2010* are the foundation for a broader effort to exploit the Revolution in Military Affairs. Indeed, the U.S. military is committed to realizing joint and Service



visions of modern warfare and is taking a number of steps to do so, including studies, war games, R&D [research and development], advanced concept technology demonstrations, and simulated warfighting experiments.

Through these efforts, the armed forces are identifying, developing, and testing concepts and capabilities that will ensure their ability to transform the future. In the joint world, there is a need to develop *Joint Vision 2010* capabilities by evolving and blending innovative concepts and emerging technologies. So we also clearly have a shared test and training — or experimenting — challenge if we are going to exploit technology, achieve dominance, and master a system-of-systems approach.

A fourth essential element for the strategy is the achievement of a 21st century defense infrastructure. As our military forces change dramatically, the way we support the warfighter must also change. The Department must be leaner, more efficient, and more cost effective in order to serve the warfighter better, faster, and less expensively. We not only have the opportunity to change, we have the requirement to change. In FY [fiscal year] 1997, 61 percent of the people employed in the Department are performing infrastructure functions.

The QDR proposes to realize \$6-7 billion annually in savings by trimming forces, streamlining infrastructure, and adjusting modernization schedules and

When two
partners in
business always
agree, one
of them is
unnecessary.

plans; this money is to be redirected for force modernization investment.

This sets a high premium on finding ways to operate more efficiently. Our fourth challenge is, therefore, to accomplish the first three affordably, which means enhancing our productivity. What then are the requirements for those of us in the test and training professions? We are being called upon to provide testing and training capabilities that meet the increasingly complex needs of the evolving strategy — and we are being called upon to do so with fewer resources. To meet these requirements, I return to the three pieces of wisdom from my grandfathers:

- We must cooperate and take a more integrated test and training approach. Freckles are interesting but not compelling
- We must more fully leverage our complementary capabilities. Test

and training bring different disciplines to the table — and that's to our mutual advantage.

- We must do these in ways that are of benefit to both the test and training communities, which means that we will need to occasionally compromise in order to meet broader objectives.

Smart Utilization of Our Ranges

In order for the DoD to support its test and training functions, it maintains some of the most complex, technologically sophisticated, and largest facilities in the world. A large proportion of defense resources (real estate, instrumentation, facilities, personnel) is invested in ranges. There are at least 54 open air ranges in our test and training infrastructure.

We must use these assets wisely, capitalize on the re-engineering revolution, and focus on providing more efficient and affordable testing and training through better planning, better processes, and better business practices.

I would contend, and the theme of this workshop suggests, that greater integration of testing and training activities could result in more productive and efficient utilization of range resources with no loss in effectiveness to either function. Under the current mode of operations, open air ranges and other facilities are formally designated as having principally either a

testing or a training mission, which translates to separate command structures, funding rationales, and operating processes and procedures within each of the Services.

Despite their differing objectives, there is considerable functional commonality between these two disciplines as well as many shared resource requirements. This commonality is expected to increase as *Joint Vision 2010* warfighting concepts require more data collection and finer granularity of data to measure training performance. The more frequent use of integrated product teams with participation of testers and trainers throughout the development cycle is also expected to foster closer relationships between the two, as will more use of modeling and simulation.

While the conduct of training operations on testing ranges and of testing events on training ranges are fairly common occurrences at many ranges, the processes and procedures in place are not particularly conducive to promoting a substantially greater amount of integration.

Most of the integration that takes place is the result of ad hoc measures to optimize range schedules or to maximize the utility of expensive operations such as missile firings. *And all our hats ought to be off to the people in the field who are making this happen.* There is a substantial amount of nonconcurrent integration, e.g., use of range facilities by both groups but at different times or locations, but there are still relatively few examples of fully integrated testing and training events. These tend to be major joint activities like ROVING SANDS, where we have found that the combination of test and training can be very powerful.

Some additional integration can be accomplished through process improvements at the range level, but substantial increases in integration will require changes – changes to range operations, infrastructure modernization planning, funding for operations and investment, and organizational structures – that may only be able to be effected at the command, Service headquarters, or DoD

level. To be sure, there are some technical hurdles. By and large, however, it is managerial and cultural limitations that prevent us from leveraging the power of our combined resources.

Some Successes, Some Failures

If I were to grade us on our progress to date, our report card would contain some successes and some failures. On the positive side of the ledger are a number of successes:

- We talk to each other now – much more than before – at forums like this one and in various meeting settings. A conference on this theme would not have been likely just two years ago.
- There is a lot of grass-roots cooperation. I see evidence of it every time I visit a range. Good people, working together, making partnership work. I applaud them and you.
- Technology enablers are coming along. Testing requires precision; training needs volume. Both are largely achievable now with common solutions.
- We have an official governing body now. The Defense Test and Training Steering Group [DTTSG] was chartered by the Principal Deputy Under Secretary of Defense for Acquisition and Technology [PDUSD(A&T)] in a memorandum of September 1994 as “key to achieving the efficient acquisition and integrated use of all test and training associated range instrumentation and the developing of policy for...test and training capabilities.”
- The Range Commanders Council continues to broaden its membership of leaders of both test and training ranges and to address technical range operational issues.
- And we have been successfully addressing some mutual problems as a cohesive community: frequency spectrum encroachment, land



withdrawal, and active range clearance of unexploded ordnance.

But we have also had some failures. High on that list I would place the lack of a shared investment strategy.

- The same PDUSD(A&T) memorandum that chartered the DTTSG directed us to develop a “joint road map for achieving commonality and interoperability among training and test instrumentation.” That joint test and training range road map was due in October 1996. I reviewed the latest draft yesterday, and it still falls short of reaching that objective – despite the hard work of many members of our communities.
- We have not solved or even seriously tackled some of the tough issues – issues like equitable sharing of the cost of mutual and joint use of ranges.

But if these were easy tasks, we would have accomplished them a long time ago. They are hard. And we should not let the failures denigrate the many successes. Rather I challenge myself and our test and training leadership and all of you to step up to these challenges.



The future
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 those who
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 to those who can
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 conception through
 the functional
 integration of many
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 to those who can
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 operational concepts
 "out the door" and
 into the hands
 of users.



Those Who Hold the Future

The nature of products and processes demanded by today's global marketplace is changing. So are the products and processes required by our defense's warfighters and strategies. The future belongs to those who can make sense of the complex, to those that can take an idea from conception through the functional integration of many complex technologies and disciplines to product realization, to those who can put complex technologies and operational concepts "out the door" and into the hands of users.

Success in this era will occur when different approaches and perspectives are brought together. The final value added needs to be greater than the sum of the parts — needs to be more than just freckles.

This places a premium on qualities that we sometimes undervalue as a society — qualities like diversity, trust, and community — and it requires that we develop an ability to bring together and reconcile those differing perspectives and approaches.

Otherwise, we will never see beyond the limits of our individual perspectives and achieve the breakthroughs that occur only through the synthesis of widely different

skills and points of view. A strong sense of community — shared between testers and trainers — is also a prerequisite for success. True progress within an envelope of complexity occurs only through trust and an appreciation of mutual benefit.

Eliminating some of the current stovepiping and promoting integration of testing and training could result in more productive and efficient utilization of range resources with no loss of effectiveness for either. But it obviously only works if both communities see a clear advantage. It can't be a case like that of two brothers sharing the use of a sled — where one gets to use it going uphill and the other gets to use it to go downhill.

Emphasis on Cooperation and Integration

In summary, cooperation and integration are the keys to success. Because of the unprecedented opportunities and challenges emerging from the rapidly changing technologies enveloping us today, emphasis on cooperation and integration stands out above the rest. We must rely on each other now more than ever before.

The Department faces a future characterized by uncertainty and the need for preparation and flexibility. Paul Strassmann, a former DoD official, used to say,

"You get what you had if you do what you always did." The QDR and *Joint Vision 2010* have crafted the strategy and operational concepts to meet that future.

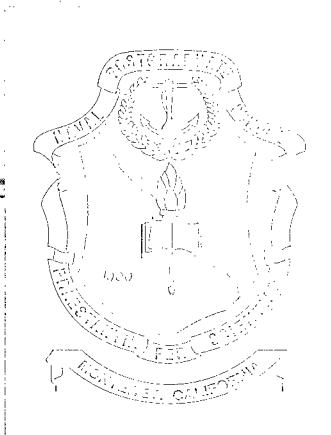
You as test and training professionals must meet the challenges this strategy and concepts pose with cooperation, that leverages the diversity of our communities as well as our common areas, to our mutual benefit and that of the entire Department and the nation as a whole.

As we collectively face these challenges, I am confident because the one asset that will assure a good outcome is excellent people. Technology may hold the key to the Revolution in Military Affairs and our future strategy, but you are the key to its application.

All of the progress of civilization is due to the contributions of people. The record of history is brilliant with the deeds of men and women who said, "I can," while it is silent for the most part concerning those who said, "I can't." Positive people believe that it is better to fail in carrying on a project than not fail because they have not tried. I believe I know this community [test and training] well enough to know that it is populated by people who say "I can."

Navy Professor Helps Air Force Contingency Planning

DALE KUSKA



"In a military contingency, you have cargo and passengers from a variety of places that have to be delivered to the theater of operations," said Professor Richard Rosenthal, operations research department chairman.

MONTEREY, Calif. — When the Air Force decided to go with the C-17 cargo plane and the Office of the Secretary of Defense needed to look at base infrastructure in Europe, they turned to a complex computer model designed in part by professors and students of the Naval Postgraduate School here.

Their creation, called a mobility optimization model, contains over 150,000 equations and 200,000 variables, and can compute the best contingency operation plan in 30 minutes to two-and-a-half hours. For instance, it helps the Air Force plan how to get troops and supplies to a designated location.

"In a military contingency, you have cargo and passengers from a variety of places that have to be delivered to the theater of operations," said Professor Richard Rosenthal, operations research department chairman

and one of the model's designers. "You're given a fleet of aircraft and a network of routes and air bases to achieve that mission. You will never have enough resources to do this, so we use modeling techniques to determine the best solution, the most efficient use of available resources to achieve the goal."

Recent graduate Air Force Maj. Steven Baker, worked on his doctorate dissertation with Rosenthal and the optimization model. Baker said the model has opened some important eyes in the transportation community, including Air Force planners in the Pentagon and the commanders of the Air Mobility Command and U.S. Transportation Command.

Baker, who's moving on to the Air Force Academy as an associate professor, recently briefed the Air Mobility Command staff at Scott Air Force Base, Ill., on the use of the latest optimization model. The command is the one most responsible for Air Force contingency planning.

"For quite a while now, AMC has principally been using a simulation to run their highly detailed modeling for things like what kind of plane do we buy to better deploy to a theater, what routes should we fly, or what bases may need more infrastructure?" Baker said. "It has occurred to most people within the [operations research] community that while simulation is an effective tool for this, optimization is also very effective, because what optimization gives is the best possible solution."

"The tradeoff is that while optimization tells you the best way to reach your goal, it cannot be as detailed as a simulation because of its complexity. But the response at AMC was pretty positive overall."

Rosenthal, along with students and other professors, has been working with the Air Force since 1993 and has received accolades for this work. He recently won the Military Operations Research Society Rist Prize for the second time. The award is one of the highest honors in the operations research community, and Rosenthal is the only person to have won it twice. He said he is honored, but credits his environment and colleagues for a lot of his success.

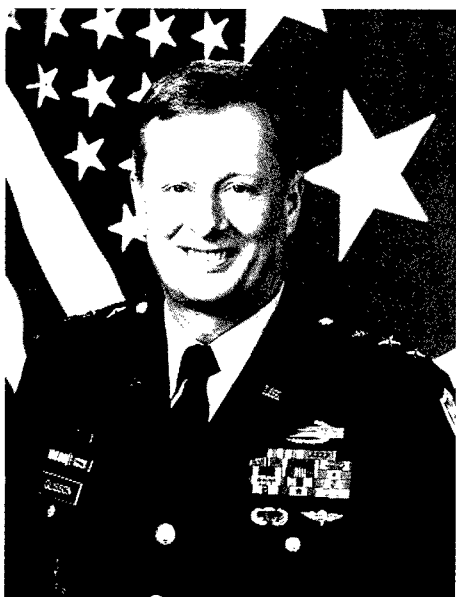
"The Naval Postgraduate School has an outstanding record in the achievement of optimization modeling," he said. "In fact, this is the fourth award we have received for this kind of work. There is a very unique atmosphere here — one that allows civilian professors to work on important military problems. And we have such outstanding students to work with."

While Baker said he is proud to provide a useful and tangible benefit to his Service, he expressed some surprise. "When I came to study here, I thought the principal benefits I would derive were a piece of paper when I graduated and a whole bunch of knowledge. I did not believe that I would become more familiar with my Service's problems and day-to-day operations," Baker said. "I'm coming out of here with a pretty solid knowledge of how airlift works in this country."

Editor's Note: Kuska is a writer with the Naval Postgraduate School, Monterey, Calif. Published as a Special to the American Forces Press Service, this information is in the public domain and may be accessed at <http://www.dtic.mil/afps/news> on the World Wide Web.



Joint Electronic Commerce Program Office Announced



LT. GEN. HENRY T.
GLISSON, U.S.
ARMY, DIRECTOR,
DEFENSE LOGISTICS
AGENCY



LT. GEN. DAVID J.
KELLEY, U.S. ARMY,
DIRECTOR, DEFENSE
INFORMATION
SYSTEMS AGENCY

DoD Photos

The Department of Defense today announced the formation of a Joint Electronic Commerce Program Office (JECPO) to implement paperless purchasing throughout the DoD. The office is organized under the Directors of the Defense Information Systems Agency (DISA) and the Defense Logistics Agency (DLA).

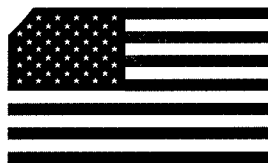
In his Defense Reform Initiative, announced in November 1997, Secretary of Defense William Cohen highlighted DoD's intent to expand the use of electronic catalogs and electronic "shopping malls," thus putting buying options in the hands of customers who actually need the products. The JECPO brings together experts from DoD's business and technology arenas who will make that intent a reality.

Lt. Gen. Henry T. Glisson, DLA Director, and Lt. Gen. David J. Kelley, DISA Director, defined their agencies' roles in the project. DLA will take the lead on business developments. It will coordinate the full business cycle requirements and functional integration; identify best business practices; handle functional industry outreach; and integrate Continuous Acquisition Life Cycle Support into DoD's business processes. DISA will oversee technical developments, providing cross-functional integration, technical architecture, and systems engineering solutions; developing and coordinating standards; setting up enterprise licensing approaches; and testing the infrastructure.

The Joint Electronic Commerce Program Office will be located at the Jefferson Building facility in Tysons Corner, Va.

Editor's Note: This information is in the public domain and may be accessed from the DefenseLINK News Home Page at <http://www.defenselink.mil/news> on the World Wide Web.

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DSMC and Australian Defence Force Academy will conduct the First International Acquisition/Procurement Seminar.

The First International Acquisition/Procurement Seminar focuses on international acquisition practices and cooperative programs. The seminar is sponsored by defense acquisition educational institutions in the United States and Australia.

The seminar will be held September 28-30, 1998, at the Australian Defence Force Academy, Canberra ACT, Australia.

Those eligible to attend are Defense Department/Ministry and defense industry employees from the two sponsoring nations, who are actively engaged in international defense acquisition programs. Other nations may participate by invitation.

Those desiring an invitation should contact any member of the International Defense Educational Arrangement (IDEA) team at DSMC. Those government personnel receiving an invitation should submit a letter of acceptance, on Agency letterhead, to DSMC by fax. Industry representatives should also submit letterhead requests by fax. Qualified participants pay *no* fee for the seminar. Invitations, confirmations, and joining instructions will be issued after July 1, 1998.

For more information, contact an IDEA Team member:

- Prof. Richard Kwatnoski, Director, International Acquisition Courses
- Sharon Boyd, Seminar Coordinator

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Risk Management in the Department of Defense

Identifying Risks to Be Taken
and Risks to Be Avoided

MARK D. SCHAEFFER

Since late 1995, the Department of Defense (DoD) has increased its emphasis on risk management. Renewed interest began when the Under Secretary of Defense for Acquisition and Technology (USD[A&T]) issued a memorandum, "Reducing Life-Cycle Costs for New and Fielded Systems," and established the policy and strategy to develop and field affordable weapon systems.¹

CAIV — A Strong Foundation

One of the foundations of the strategy is the concept of "Cost as An Independent Variable" (CAIV). The CAIV concept recognizes that "There are risks to be taken and risks to be avoided. When risks are taken, we will put in place appropriate risk management and contingency plans."

Other simultaneous, ongoing initiatives included acquisition streamlining, a major revision of acquisition policy contained in the DoD 5000-series documents, and emphasis by acquisition officials on equitable sharing of program risk between contractors and the government. These initiatives also increased the emphasis placed on program risk management.

At the same time, the DoD Inspector General (DoDIG) wrote a critical report of risk management in program offices and recommended that DoD take measures to improve existing practices.

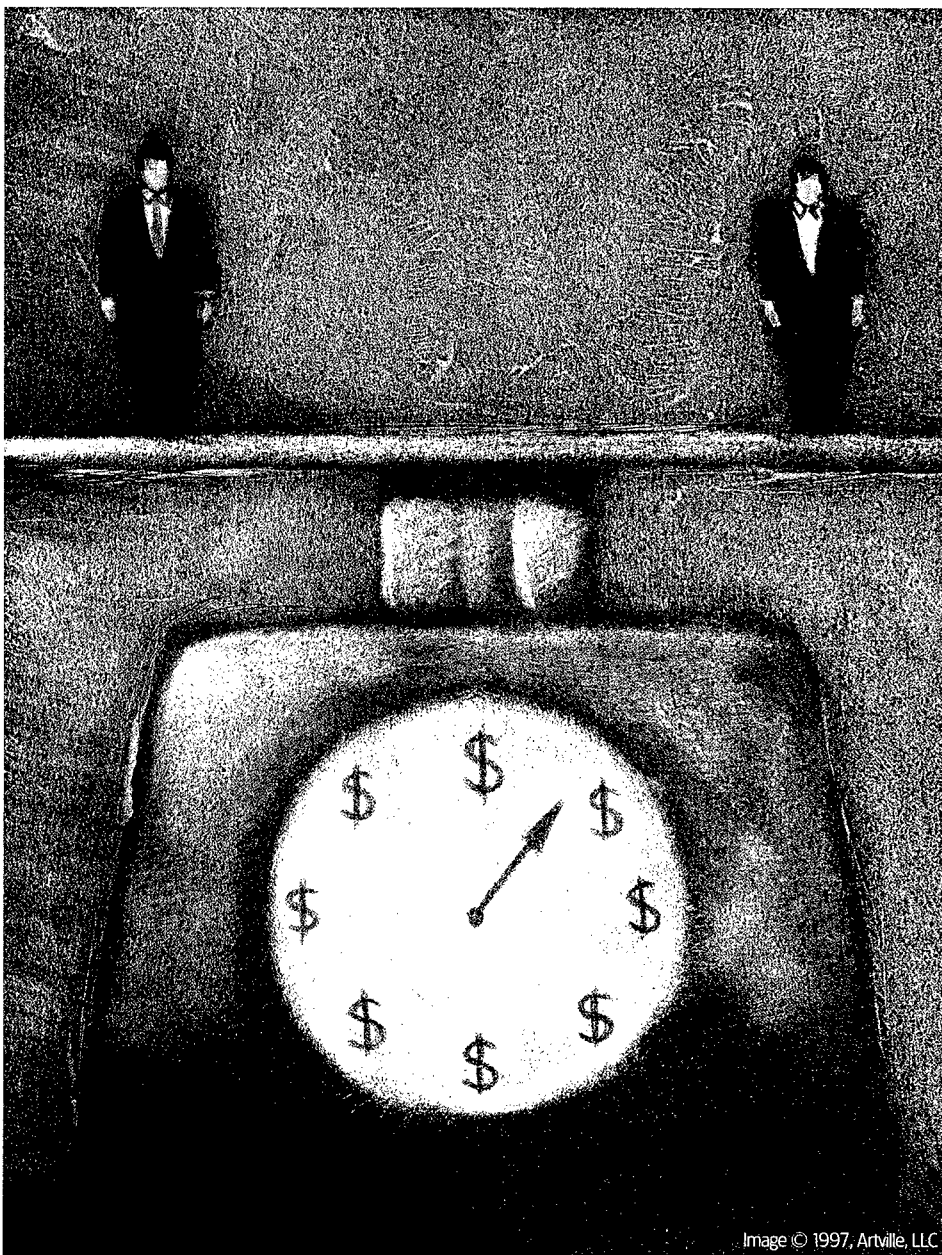


Image © 1997, Artville, LLC

Schaeffer is the Deputy Director, Systems Engineering, Director, Test, Systems Engineering and Evaluation (DTSE&E), Office of the Under Secretary of Defense for Acquisition and Technology, OSD, The Pentagon, Washington, D.C. Also contributing to the article were Mike Zsak, a member of the DTSE&E Systems Engineering staff, and Louis Simpleman from the Institute for Defense Analyses.

Uncertain about the Department's treatment of risk in this dynamic environment, the USD(A&T) tasked the Director Test, Systems Engineering, and Evaluation (DTSE&E) to review DoD risk management practices and techniques, determine whether DoD needs to identify new approaches to improve risk management, and report the results to USD(A&T).

Within DTSE&E are several Directorates. Our Directorate — Systems Engineering — retains the functional responsibility for DoD risk policy. Therefore, the Director tasked our staff to complete the USD(A&T) assignment. This article tells our experiences in establishing a Risk Management Working Group, our observations and lessons learned, and ultimately our success in recasting the

primary aspects of risk management in the DoD acquisition process.

Risk Management Working Group Established

In response to DTSE&E's tasking, we established a Risk Management Working Group composed of members of the Systems Engineering staff, the Office of the Secretary of Defense (OSD) staff, representatives from the Services, and members of other DoD agencies involved in systems acquisition.

The Institute for Defense Analyses served as our Working Group's analytical arm. As such, its members reviewed pertinent DoD directives and regulations, examined how the Services managed risk, studied various examples of risk management by companies in commercial

industry, and looked at DoD training and education activities in risk management.

Our Working Group also coordinated with other DoD-related efforts. For example, the ongoing efforts of the Joint Aeronautical Commanders Group in the area of risk management provided valuable information. Workshops for the CAIV flagship programs provided our Working Group current, real-world examples of how program managers can implement the CAIV initiative and risk management programs.

Further, we worked closely with managers of ongoing software efforts to ensure the overall risk management strategy also included software risks. Still other information sources included the Open Systems Joint Task Force, Safety, and Cost Estimating communities.

LAYING THE GROUNDWORK FOR THE RISK MANAGEMENT WORKING GROUP. PICTURED FROM LEFT: MIKE ZSAK, SYSTEMS ENGINEERING DIRECTORATE, DTSE&E, USD(A&T); MARK D. SCHAEFFER, DEPUTY DIRECTOR, SYSTEMS ENGINEERING, DTSE&E, USD(A&T); LOUIS SIMPLEMAN, INSTITUTE FOR DEFENSE ANALYSES.



Photo courtesy IDA

Risk has two components, likelihood and consequences, that determine its potential impact on a program. This idea conveys the need to evaluate both factors before determining the necessity for mitigating action.

DTSE&E subsequently summarized the findings of our investigation, and in July 1996 presented the results and recommendations to the Defense Manufacturing Council (DMC) [now the Defense Systems Affordability Council (DSAC)], an advisory body to USD(A&T), chaired by [then] Principal Deputy Under Secretary of Defense for Acquisition and Technology, R. Noel Longuemare. This body directed DTSE&E to add guidance in the Defense Acquisition Deskbook (DAD) for implementing the policy in DoD Directive 5000.1 and DoD Regulation 5000.2-R.

Insights and Observations

Based on a thorough review of the new acquisition policy documents, our Working Group determined that DoD Directive 5000.1 and DoD Regulation 5000.2-R contain strong statements on risk management; however, they do not stress the concept that risk assessments should continually address possible future problems. A 1986 Government Accounting Office report on risk management² and a DoDIG audit report, "Risk Management for Defense Acquisition Systems,"³ both recognize this need.

After visiting several program offices, our Working Group made a number of ob-

servations and evaluations that identify impediments to sound risk management:

Forward Thinking. If program managers are looking toward the future, in all probability they will work to prevent problems, thereby reducing risk, rather than resolving problems through crisis management.

Reporting Risk at Decision Mile-stone. Clearly, some program managers assessed program risk only before a milestone review. They were not using the information gained from their risk assessments in their program management strategy.

New Publications Include Only Mandatory Information. In the revision of DoD Directive 5000.1 and DoD Regulation 5000.2-R, DoD did not include nonmandatory implementation guidance for risk management such as formats for reports and direction on what should be included in a risk assessment.

For example, the "Integrated Program Summary" Risk Assessment format — Annex D of the superseded DoD Manual 5000.2M — is no longer required, and it should not be, given that the new publications include only mandatory information. However, reporting risk at decision milestone remains an integral part of the program approval process, and many program managers still refer to the old DoD 5000.2-M as a guide for reporting risk data.

Our Working Group recognized the need for this type of information and suggested that the new policy documents be augmented in the Defense Acquisition Deskbook to assist program managers in this area.

Lack of Conformity in Approaches to Risk Management Among the Services. As one might expect, our Working Group found that the Services vary in their treatment of risk. Furthermore, within each Service, program offices had different approaches. Although nothing is wrong with this, and OSD does not expect a standard approach, our review of literature and risk programs in DoD and industry revealed that good risk

management programs contain certain common elements.

Such programs have structure, are formal and proactive, and everyone associated with the program considers risk management to be a normal part of his or her job. Moreover, our Working Group believed that because these characteristics are so important, the design of all risk management programs should include some type of formal structure, even though individual approaches will vary.

Industry Participation in Risk Management. Our review of industry proved very interesting. We concentrated on commercial companies, since we had a sufficient look at defense contractors through the review of government program offices.

Overall, the companies that shared information with our Working Group are concerned about risk because failure to meet schedules or develop a product within a planned budget could seriously affect their opportunities for profit.

Generally, commercial companies focus on getting products to market, on time, at a competitive cost. Consider the importance of an air conditioner manufacturer ensuring its new products are ready for sale in the spring. Failure to do so may result in lost sales.

Imagine the impact on the profits of an automobile company that failed to meet its planned date for introduction of a new model and lost its market share to a competitor.

Likewise, pharmaceutical companies have seven years after earning a patent for a product to recoup their investment. During this time they must complete testing, gain Federal Drug Administration approval, and market, manufacture, and sell their products.

We found that the companies that worked with us have both informal and formal structured risk management approaches to help them meet their objectives. Informal approaches use management information and planning sys-

tems, such as an integrated master scheduling software program, to collect data and evaluate a program's status.

Companies using a structured process are remarkably similar to DoD; they have milestones, program reviews, exit criteria, and performance thresholds. With the exception of the review names and participants' titles, the formal processes are virtually identical to the DoD acquisition process. These companies also stress the importance of being prospective in nature, and regard as undesirable a management approach that seeks solutions after risk events occur, i.e., crisis management.

Primarily, companies handle risk by using evolutionary approaches to product development. They rely heavily on past experience and are reluctant to pursue development of a product in an area in which they lack expertise. This practice gives them a workforce familiar with the processes that will be required to develop and manufacture the product, and a historical database from which to draw lessons learned. Experience and historical information are big factors in their ability to manage risk.

In addition, our Working Group found that commercial companies used the same basic risk management practices and techniques available to government program managers — there is no new or magic formula for risk management used by commercial industry.

Importance of IPPDs. One common characteristic that DoD programs and industry share is the adoption of the Integrated Product and Process Development (IPPD) concept, a concept previously endorsed as an important initiative of USD(A&T)'s acquisition reform efforts. IPPD promotes information sharing and broad-based planning, which constitute the basis for members of the program offices, the system developer, and the procuring agencies to assess and monitor program risk.

Recognizing that successful implementation of the IPPD concept is critical to conducting an effective and continuous

risk management process, our Working Group identified in the study findings, a need to emphasize the relationship between Risk Management and IPPD as a key management tenet.

Test and Evaluation Program. Industry and government also agree that a thorough test and evaluation program is vital to risk management. Through the test process, managers obtain the data to measure how well the program is handling its risk.

Software Risk Management. In the past, program managers tended to treat software risk management as unique. Our Working Group, which included soft-

ware experts, verified that the software risk management process is the same as that used in the management of other technical risks. Techniques that apply to hardware systems also apply to software-intensive programs.

Risk Management Training. Our Working Group also focused on how well DoD is training acquisition professionals on the subject of risk management, and concluded that the Defense Acquisition University (DAU) and its consortium schools needed to include in their curricula, increased training on how program offices should apply sound risk management principles.

At the request of DTSE&E, the DAU and DSMC group members used material from the study to upgrade their teaching notes, and created new risk man-

DAD includes a general section that presents an overview of DoD's concept of risk, a list of risk-related definitions, and describes a structure (to the left) as depicted in the chart for managing risk.

Other sections discuss risk and the acquisition process, program management and risk management, and management tools and techniques. Except for the mandatory sources, which are labeled as such, guidance in the DAD is discretionary; however, the information is useful to anyone interested in developing a risk management program.

No need exists to expand on the information in the DAD since it is available to everyone via the World Wide Web, but several points covered in the Deskbook are important and deserve emphasis.

Likelihood and Consequences. First is the concept that risk has two components, likelihood and consequences, that determine its potential impact on a program. This idea conveys the need to evaluate both factors before determining the necessity for mitigating action.

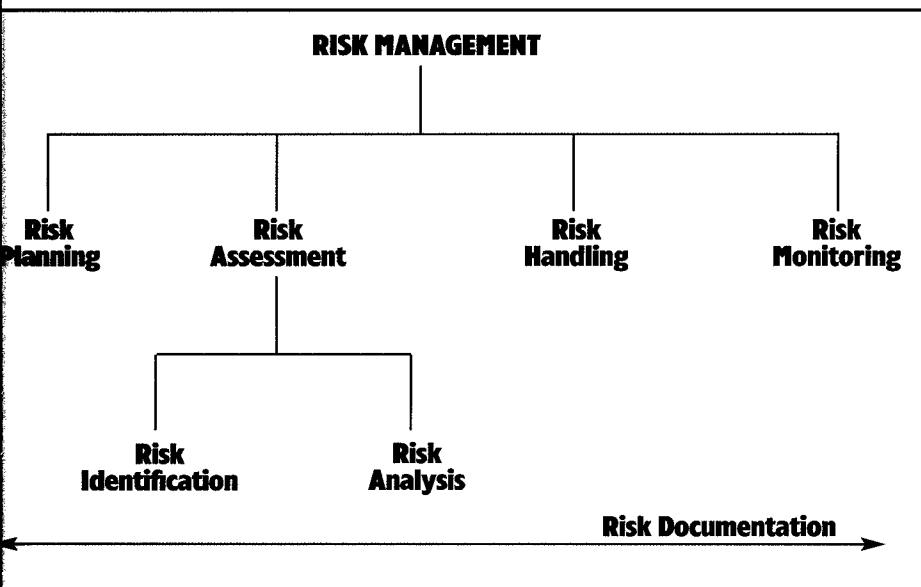
For example, there may be a high likelihood of an event happening, but if the consequences are not severe, a program manager may elect to assume the risk and take no mitigating action. Conversely, a program manager may act to control a risk event with a relatively low likelihood of occurring if it has catastrophic consequences.

It is the combination of these attributes that a program manager must analyze to determine the priority for expending resources for mitigation.

Focus. This leads to the second important point. Program offices should focus on critical areas. Before acquisition reform, DoD had a strong focus on risk avoidance; as a result, we ultimately focused resources to mitigate all risks.

The government and contractors universally find it extremely difficult to mitigate every risk inherent to a complex acquisition program or major system upgrade; yet, if they focus on the critical

DoD Risk Management Structure



ware experts, verified that the software risk management process is the same as that used in the management of other technical risks. Techniques that apply to hardware systems also apply to software-intensive programs.

Software, like other engineering disciplines, has characteristics that can make it difficult to manage. However, when identifying and assessing areas that might adversely impact their programs, program managers must include hardware and software events, develop mitigation plans for risk areas, and monitor the risk handling activities. It is, in fact, a systems approach to managing risk, and for that reason DTSE&E expects that software

agement lesson modules. After a thorough review by our Working Group and approval by the Technical Management Functional Board,⁴ DAU incorporated the new modules in its applicable course curricula.

DTSE&E will continue to use our Risk Management Working Group as the focal point to keep risk-related information in the DAD current, and, in turn, ensure that the information taught in the various courses is up-to-date.

Sharing Information

Following the guidance of the DMC [DSAC], we summarized our study results in Section 2.5.2 of the DAD. The

areas, usually a reasonable number, handling those areas that could be most damaging becomes more probable. Program managers must focus on the critical high- and moderate-risk areas rather than expending resources on low areas.

Moreover, because of affordability constraints on today's programs, program managers can no longer afford to attempt to buy down all risks. In some cases, they cannot afford to spend scarce development dollars on high-performance, high-risk objectives.

Structured Process. Finally, a good risk management program includes the processes of planning, assessing (which includes identification and analyses), developing handling actions, monitoring (which is done through collecting normal programmatic, test, and evaluation data), and documenting all aspects of the risk program.

As discussed previously in this article, our Working Group agreed on the importance of a structured process (as described in the DAD) as characteristic of good risk management in government as well as industry. Programs may vary in form; however, sound risk management processes include these structured processes.

DTSE&E Role

Our role with regard to risk management in the acquisition process is well defined. Based on our charter, the Systems Engineering Directorate will —

- support the system assessment process with personnel resources and technical expertise to assess programs' treatment of risk and advise decision makers accordingly;
- serve as the focal point for Engineering and Test policy coordination and guidance, to ensure that DoD risk-related policy is current and relevant;
- assist, as necessary, in the development of tools, techniques, and

processes to support risk management in the acquisition process;

- ensure that technical career training adequately addresses the subject of risk management; and
- support the applicable committees within DoD and industry on risk-related matters.

Our intent is to serve as the focal point for the exchange of all risk-related information for DoD and the Defense industry. Ultimately, our goal is to provide program managers with information that will help them manage program risk.

Toward that end, we plan to update risk-related documents, where necessary, and to search government and industry sources for tools, techniques, and metrics that will assist program managers. We will update the DAD, based on feedback from users and as information becomes available from our research. For information that is not appropriate for the DAD, we have a World Wide Web site.

Moreover, the Risk Management Working Group will continue to meet to exchange information and serve as the conduit for sharing information with the Services. In addition, we are evaluating the need for a stand-alone course in risk management to ensure that acquisition professionals are adequately trained.

Finally, we will continue to work within DoD and with other government agencies, industry, and academia to advance the state of the practice of risk management.

Recasting Risk Management

Several important actions resulted from our study of Risk Management.

- In recasting the important aspects of risk management, we changed DoD's approach to sound risk management from one that required program managers to periodically *examine and report* program risk, to an approach that emphasizes the need for everyone associated with a program to *continuously manage risk*.

- In the DAD, we provide definitions and a structure for a risk management program that reflect current DoD, industry, and academia best practices.
- For the day-to-day management of risk, the DAD also describes the latest tools and techniques used by successful program managers.
- We are continually updating the risk management material in DAU courses to ensure that what we teach students reflects current practices.

In the future, we will build on the experience and knowledge of DoD acquisition professionals, industry, and academia to give managers the tools they need to successfully manage risk in their programs.

Program managers will always have the job of managing program risks. Our goal is to ensure that they have the necessary tools to do that job in the most effective and efficient way possible.

END NOTES

1. "Reducing Life-Cycle Costs for New and Fielded Systems," Memorandum (USD[A&T]), December 4, 1995).
2. *Technical Risk Assessment: The Status of Current DoD Efforts*, PEMD-86-5 (GAO, Washington, D.C., April 1986).
3. "Risk Management for Defense Acquisition Systems," Report 96-162 (DoDIG, March 22, 1996).
4. The Technical Management Functional Board is composed of experts in appropriate technical areas and is responsible for setting the technical content for courses such as; Systems Planning, Research, Development, and Engineering; Acquisition Logistics; Production and Quality Management; and Test and Evaluation. Since lessons cover only several hours in each of the courses, the Risk Management Working Group is presently reviewing the need for a dedicated risk management course.



A Bimonthly Magazine
of the Defense Systems
Management College

ATTENTION DEFENSE INDUSTRY MANAGERS, EXECUTIVES, PROGRAM/PROJECT OFFICERS!



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THE DEFENSE SYSTEMS MANAGEMENT COLLEGE
A MEMBER OF THE DEFENSE ACQUISITION UNIVERSITY CONSORTIUM
[HTTP://WWW.DSMC.DSM.MIL](http://WWW.DSMC.DSM.MIL)

(703) 805-2828





ACQUISITION REFORM

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Surfing the Net

DoD Acquisition Workforce Personnel Demonstration Project

<http://www.crfpst.wpafb.af.mil/demo/homepage.html>

Demonstration project documents, FAQs, and related sites.

FEDERAL CIVILIAN AGENCIES

ARNET (Joint Effort of the National Performance Review and Office of Federal Procurement Policy)

<http://www.arnet.gov/>

Virtual library; procurement resources; best practices; business opportunities.

Federal Acquisition Institute (FAI)

<http://www.gsa.gov/staff/v/training.htm>

One-stop acquisition training shop; Federal Acquisition Streamlining Act resource materials; FAR; Federal Acquisition Reform Act.

Federal Acquisition Jump Station

<http://procure.msfc.nasa.gov/fedproc/home.html>

Procurement and acquisition servers by contracting activity; CBDNet; Reference Library.

General Accounting Office (GAO)

<http://www.gao.gov>

Investigative arm of Congress; examines matters relating to the receipt and disbursement of public funds. Allows users access to GAO reports, FAQs.

General Services Administration (GSA)

<http://www.gsa.gov>

Online shopping for commercial items to support government interests.

Library of Congress

<http://www.loc.gov>

Public laws; legislation; vetoed bills; Congressional Internet services.

National Performance Review (NPR)

<http://www.npr.gov/>

Government cost-savings advice; "how to" tools; customer service; accomplishments and awards.

National Technical Information Service (NTIS)

<http://www.fedworld.gov/preview/preview.html>

Online ordering and FAQs.

Small Business Administration (SBA)

<http://www.SBAonline.SBA.gov>

Communications network for small businesses.

U.S. Coast Guard

<http://www.dot.gov/dotinfo/uscg/welcome.html>

News and current events; services; points of contact.

INDUSTRY AND PROFESSIONAL ORGANIZATIONS

Aerospace Industries Association

<http://www.access.digex.net>

Critical issues facing today's U.S. aerospace industry; access to related Internet sites.

Commerce Business Daily

<http://www.govcon.com/>

Access to current and back issues with search capabilities; business opportunities; interactive yellow pages.

Electronic Industries Association (EIA)

<http://www.eia.org>

Government Relations Department includes links to issue councils.

National Contract Management

Association (NCMA)

<http://www.ncmahq.org>

"What's New in Contracting?"; educational products catalog.

National Defense Industrial Association (NDIA)

<http://www.ndia.org>

Events; government policy; virtual conference center; much more!

Society of Logistics Engineers (SOLE)

<http://www.sole.org/>

Online desk references that link to advice in solving logistics problems.

TOPICAL LISTINGS

ACQWEB Index of Offices by Title

<http://www.acq.osd.mil/acqweb/topindex.html>

Great launch pad to acquisition-specific sites and topics.

DoD Specifications and Standards Home Page

<http://www.acq.osd.mil/es/std/stdhome.html>

Military standards and specifications reform; FAQs; key POCs; standardization library (newsletters, policy memos, and other documents); training, seminars, and conferences; commercial and nondevelopmental item programs.

Earned Value Management

<http://www.acq.osd.mil/pm>

Implementation of Earned Value Management; latest policy changes; standards; international developments; active notebook.

Fedworld Information

<http://www.fedworld.gov>

Comprehensive central access point for searching, locating, ordering, and acquiring government and business information.

GSA Advantage

<http://www.fss.gsa.gov>

Assistance in using the government-wide purchase card.

If you have questions about the above sources, or would like to add your Website to this list, please call the Acquisition Reform Communications Center (ARCC) at 1-888-747-ARCC. DAU encourages the reciprocal linking of its Home Page to other interested agencies. Contact the DAU Webmaster at: dau_webmaster@acq.osd.mil



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Surfing the Net

DEPARTMENT OF DEFENSE

Under Secretary of Defense (Acquisition and Technology) (USD(AT&T))
<http://www.acq.osd.mil/HomePage.html>
 Helps locate a specific office or USD(AT&T) document.

Deputy Under Secretary of Defense (Acquisition Reform) (DUSD(AR))
<http://www.acq.osd.mil/ar>
 Upcoming events; legislation; DUSD(AR) organizational breakout. "Ask A Professor" link allows users to ask questions and receive responses within 10 business days.

Acquisition Systems Management (Defense Acquisition Board [DAB] Executive Secretary)
<http://www.acq.osd.mil/api/asm/>
 Organization; mission; products; customers; Frequently Asked Questions (FAQ).

DoD Acquisition Workforce Home Page
<http://www.dtic.mil/acqcd2/acqcd.html>
 Current legislation; regulations; critical acquisition positions; FAQs for the acquisition workforce.

Defense Acquisition Deskbook
<http://www.deskbook.osd.mil>
 Automated acquisition reference tool covering mandatory and discretionary practices as well as procurement wisdom.

Defense Acquisition University (DAU) and Acquisition Reform Communications Center (ARCC)
<http://www.acq.osd.mil/dau>
 DAU course and schedule information; consortium school links; acquisition documents and publications. ARCC provides Acquisition Reform training information and materials, including satellite broadcast information!

Army Acquisition Corps (AAC)
<http://www.dacm.sarda.army.mil>
 News; policy; publications; training opportunities.

Army Contracting
<http://www.acqnet.sarda.army.mil>
 Library of documentation; newsletters; training and business opportunities; past performance; paperless contracting; labor rates.

Navy Acquisition Reform
<http://www.acq-ref.navy.mil/>
 Policy and guidance; World-Class Practices; Acquisition Center of Excellence; training opportunities.

Air Force (Contracting)
<http://www.hq.af.mil/SAFAQ/contracting/>
 Business opportunities with the Air Force; various training options; library of publications.

Air Force (Acquisition)
<http://www.safaq.hq.af.mil/>
 Career development; policy and guidance; initiatives; much more!

Air Force Materiel Command (AFMC) Contracting Laboratory's Federal Acquisition Regulation (FAR) Site
<http://www.farsite.hill.af.mil/>
 FAR search tool; information on open FAR and Defense Federal Acquisition Regulation (DFAR) cases; Federal Register; Commerce Business Daily Announcements; Electronic Forms Library.

US Air Combat Command — Contracting Division
<http://www.acclg.af.mil/lgc/lgc.htm>
 Policy guidance and technical assistance in areas such as: performance measurement; operational contracting; International Merchant Purchase Authorization Card; commercial practices; outsourcing.

Centralized Request for Proposal (CRP) Support Team Office
<http://www.crpst.wpafb.af.mil/>
 Lightning Bolt information; announcements and events; sample documents.

Defense Advanced Research Projects Agency (DARPA)
<http://www.arpa.mil>
 Planned procurement examples available for downloading; small business information; news releases; current solicitations.

Defense Information Systems Agency (DISA)
<http://www.disa.mil>
 Structure and mission of DISA; products and services; contracting opportunities.

Defense Systems Management College (DSMC)
<http://www.dsmc.dsm.mil>
 DSMC educational products and services.

National Imagery and Mapping Agency (NIMA)
 [Formerly Defense Mapping Agency (DMA)]
<http://www.nima.mil>
 Geospatial and imagery information; publications; business opportunities.

Defense Modeling and Simulation Office (DMSO)
<http://www.dmsomil>
 Modeling and Simulation Master Plan; services; resources; activities.

Defense Technical Information Center (DTIC)
<http://www.dtic.mil/>
 Planned, ongoing, and completed defense-related research.

DoD Electronic Commerce/Electronic Data Interchange Office (EC/EDI)
<http://www.acq.osd.mil/ec/>
 Central Contractor Registration; Value Added Networks; current EDI sites and assistance center; online resources.

Open Systems Joint Task Force
<http://www.acq.osd.mil/osjtf>
 Open Systems education and training opportunities; plans and initiatives; studies; documentation.

Government Education and Training Network (GETN) (For Department of Defense Only)
<http://www.afit.af.mil/Schools/DL/schedule.htm>
 Schedule of distance learning opportunities.

Government-Industry Data Exchange Program (GIDEP)
<http://www.gidep.corona.navy.mil>
 Non-conforming products; diminishing manufacturing sources; engineering; metrology; reliability-maintainability for better readiness and reduced costs.

Office of the Press Secretary

President Clinton Names David R. Oliver, Jr. As Principal Deputy Under Secretary Of Defense For Acquisition And Technology

The President today announced his intent to nominate David R. Oliver, Jr., as Principal Deputy Under Secretary of Defense for Acquisition and Technology. David R. Oliver, Jr., of Idaho, is currently Director of Business Development and Technology for Naval Systems, Northrop Grumman Electronic Sensors and Systems Division, where he has been for almost a year. From 1995 to 1996, he was Director of the ICR Program and Manager for Analysis and Evaluation [for] Westinghouse Electronic Systems Group. In 1995, he retired from the U.S. Navy with the rank of Rear Admiral (Upper Half). His last assignment was as the Principal Deputy to the Assistant Secretary of the Navy for Research, Development, and Acquisition, where he served in both policymaking and line officer positions, including serving as the Commander of all Attack Submarines on the West Coast at one point, and Chief of Staff at the Seventh Fleet in another assignment.

Oliver received his B.S. from the United States Naval Academy in Marine Engineering, and his M.A. from American University in Political Science and International Affairs.

The Principal Deputy Under Secretary for Acquisition and Technology serves as the second ranking acquisition official for the Department of Defense. The Office of the Under Secretary for Acquisition and Technology advises the Secretary of Defense on all matters relating to the Defense acquisition process.

Editor's Note: Oliver's nomination now goes before the U.S. Senate for confirmation. This information is in the public domain and may be accessed at <http://library/whitehouse.gov/PressReleases> on the World Wide Web.

TENTH ANNUAL INTERNATIONAL ACQUISITION/PROCUREMENT SEMINAR — ATLANTIC



JULY 6-10, 1998

**Sponsored by the
International Defense Educational Arrangement (IDEA)
at the
CENTRE DES HAUTES ÉTUDES
DE L'ARMEMENT (CHEAr),
PARIS, FRANCE**

TOPICS

- Comparative National Acquisition Practices
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- Transatlantic Cooperation
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Qualified participants pay no seminar fee.

**For further information, contact any member of DSMC's IDEA Team at
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The Tenth Annual Acquisition/Procurement Seminar focuses on international acquisition practices and cooperative programs. The seminar is sponsored by the International Defense Educational Arrangement (IDEA) between defense acquisition educational institutions in France, the United States, the United Kingdom, and Germany.

Those eligible to attend are Defense Department/Ministry and defense industry employees from the four IDEA nations who are actively engaged in international defense acquisition programs. Other nations may participate by invitation. Nations participating in past seminars were Australia, Belgium, Canada, Denmark, Italy, Japan, The Netherlands, Norway, Portugal, Singapore, Spain, and Switzerland.

This year the seminar will be held July 6-10, 1998, at the Centre des Hautes Études de l'Armement (CHEAr), in Paris, France. The last day of the seminar, July 10, will be an optional day for those interested in international testing or the educational aspects of international acquisition.

The IDEA Seminar is by invitation only. Those desiring an invitation, who have not attended past IDEA Seminars, should contact any member of the IDEA team at DSMC. Those government personnel receiving an invitation should submit a letter of acceptance, on Agency letterhead, to DSMC by fax. Industry representatives should also submit letterhead requests by fax. Qualified participants pay *no* fee for the seminar. Invitations, confirmations, and joining instructions will be issued after May 1, 1998.

For more information, contact an IDEA Team member:

- Prof. Richard Kwatnoski, Director, International Acquisition Courses
 - Sharon Boyd, Seminar Coordinator
- Commercial:** (703) 805-5196/4592
DSN: 655-5196/4592
Fax: (704) 805-3175
 or DSN 655-3175

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AIR FORCE NEWS SERVICE

Editor's Note: The following text is an excerpt from the President's list of Air Force brigadier generals nominated for promotion to the grade of major general. DSMC joins friends, colleagues, and members of the professional acquisition workforce in congratulating Air Force Maj. Gen. (Sel) Claude M. Bolton, Jr., on this milestone achievement in his career. (This information is in the public domain; the entire list may be accessed at <http://www.af.mil/news> on the World Wide Web.)

WASHINGTON (AFNS) — Secretary of Defense William S. Cohen announced Jan. 22 that the President has nominated to the Senate the following active-duty Air Force brigadier generals for promotion to the grade of major general.

Excerpt

Claude M. Bolton, Jr., Director of Requirements, Air Force Materiel Command, Wright-Patterson Air Force Base, Ohio



MAJ. GEN. (SEL) CLAUDE M. BOLTON, JR.
U.S. AIR FORCE
12TH COMMANDANT
DEFENSE SYSTEMS MANAGEMENT COLLEGE
MARCH 1993 — MARCH 1996
DoD Photo

JIM GARAMONE

ASHINGTON — DoD officials are already making changes to conform with the directives of the Defense Reform Initiative.

Deputy Defense Secretary John Hamre has signed memos directing studies, realigning agencies, and shifting responsibilities. The most far-reaching effort announced so far entails a one-third reduction in the Office of the Secretary of Defense staff over the next 18 months. Hamre ordered a downsizing plan in a memo to Under Secretaries, Assistant Secretaries, and Directors.

"The plan should describe organizational and functional realignments necessary to implement the reform initiatives," the memo reads. Other actions include:

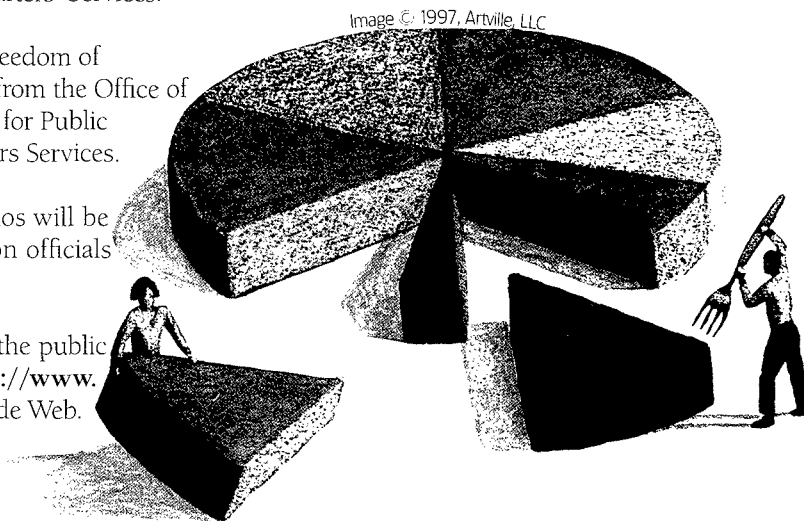
- Appointing Larry Lynn, Director, Defense Advanced Research Projects Agency, to head a team looking to establish a Defense Threat Reduction and Treaty Compliance Agency.

The new agency will merge the Defense Special Weapons Agency; the On-Site Inspection Agency; the Defense Technical Security Administration; the Office of the Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Defense Programs; the Office of the Deputy Director Arms Control Implementation and Compliance; and the Office of the Director Strategic and Tactical Systems.

- Transferring the Defense Technical Information Center from the Defense Logistics Agency to the Defense Information Systems Agency. Further, the memo directs the information agency to study contracting out the services of the center.
- Renaming the Defense Investigative Service the Defense Security Service. The organization expanded its role, merging with the DoD Polygraph Institute, the Personnel Security Research Center, and the DoD Security Institute.
- Transferring the Defense Privacy Office from the Office of the Director, Administration and Management, to the Washington Headquarters Services.
- Transferring the Directorate for Freedom of Information and Security Review from the Office of the Assistant Secretary of Defense for Public Affairs to Washington Headquarters Services.

More Defense Reform Initiative memos will be signed in the coming weeks, Pentagon officials said.

Editor's Note: This information is in the public domain and may be accessed at <http://www.dtic.mil/afps/news> on the World Wide Web.





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<http://www.crfpst.wpafb.af.mil/demo/homepage.html>
Demonstration project documents, FAQs, and related sites.

<http://www.arnet.gov/>
Virtual library; procurement resources; best practices; business opportunities.

<http://www.gsa.gov/staff/v/training.htm>
One-stop acquisition training shop; Federal Acquisition Streamlining Act resource materials; FAR; Federal Acquisition Reform Act.

<http://procure.msfc.nasa.gov/fedproc/home.html>
Procurement and acquisition servers by contracting activity; CBDNet; Reference Library.

<http://www.gao.gov>
Investigative arm of Congress; examines matters relating to the receipt and disbursement of public funds. Allows users access to GAO reports, FAQs.

<http://www.gsa.gov>
Online shopping for commercial items to support government interests.

<http://www.loc.gov>
Public laws; legislation; vetoed bills; Congressional Internet services.

<http://www.npr.gov/>
Government cost-savings advice; "how to" tools; customer service; accomplishments and awards.

<http://www.fedworld.gov/preview/preview.html>
Online ordering and FAQs.

<http://www.SBAonline.SBA.gov>
Communications network for small businesses.

<http://www.dot.gov/dotinfo/uscg/welcome.html>
News and current events; services; points of contact.

<http://www.access.digex.net>
Critical issues facing today's U.S. aerospace industry; access to related Internet sites.

<http://www.govcon.com/>
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<http://www.eia.org>
Government Relations Department includes links to issue councils.

<http://www.ncmahq.org>
"What's New in Contracting?"; educational products catalog.

<http://www.ndia.org>
Events; government policy; virtual conference center; much more!

<http://www.sole.org/>
Online desk references that link to advice in solving logistics problems.

<http://www.acq.osd.mil/acqweb/topindex.html>
Great launch pad to acquisition-specific sites and topics.

<http://www.acq.osd.mil/es/std/stdhome.html>
Military standards and specifications reform; FAQs; key POCs; standardization library (newsletters, policy memos, and other documents); training, seminars, and conferences; commercial and nondevelopmental item programs.

<http://www.acq.osd.mil/pm>
Implementation of Earned Value Management; latest policy changes; standards; international developments; active notebook.

<http://www.fedworld.gov>
Comprehensive central access point for searching, locating, ordering, and acquiring government and business information.

<http://www.fss.gsa.gov>
Assistance in using the government-wide purchase card.

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<http://www.acq.osd.mil/HomePage.html>
Helps locate a specific office or USD(A&T) document.

<http://www.acq.osd.mil/ar>
Upcoming events; legislation; DUSD(AR) organizational breakout. "Ask A Professor" link allows users to ask questions and receive responses within 10 business days.

<http://www.acq.osd.mil/api/asm/>
Organization; mission; products; customers; Frequently Asked Questions (FAQ).

<http://www.dtic.mil/acqcd2/acqcd.html>
Current legislation; regulations; critical acquisition positions; FAQs for the acquisition workforce.

<http://www.deskbook.osd.mil>
Automated acquisition reference tool covering mandatory and discretionary practices as well as procurement wisdom.

<http://www.acq.osd.mil/dau>
DAU course and schedule information; consortium school links; acquisition documents and publications. ARCC provides Acquisition Reform training information and materials, including satellite broadcast information!

<http://www.dacm.sarda.army.mil>
News; policy; publications; training opportunities.

<http://www.acqnet.sarda.army.mil>
Library of documentation; newsletters; training and business opportunities; past performance; paperless contracting; labor rates.

<http://www.acq-ref.navy.mil/>
Policy and guidance; World-Class Practices; Acquisition Center of Excellence; training opportunities.

<http://www.hq.af.mil/SAFAQ/contracting/>
Business opportunities with the Air Force; various training options; library of publications.

<http://www.safaq.hq.af.mil/>
Career development; policy and guidance; initiatives; much more!

<http://www.farsite.hill.af.mil/>
FAR search tool; information on open FAR and Defense Federal Acquisition Regulation (DFAR) cases; Federal Register; *Commerce Business Daily* Announcements; Electronic Forms Library.

<http://www.acclg.af.mil/lgc/lgc.htm>
Policy guidance and technical assistance in areas such as: performance measurement; operational contracting; International Merchant Purchase Authorization Card; commercial practices; outsourcing.

<http://www.crfpst.wpafb.af.mil/>
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Planned procurement examples available for downloading; small business information; news releases; current solicitations.

<http://www.disa.mil>
Structure and mission of DISA; products and services; contracting opportunities.

<http://www.dsmc.dsm.mil>
DSMC educational products and services.

<http://www.nima.mil>
Geospatial and imagery information; publications; business opportunities.

<http://www.dmsso.mil>
Modeling and Simulation Master Plan; services; resources; activities.

<http://www.dtic.mil/>
Planned, ongoing, and completed defense-related research.

<http://www.acq.osd.mil/ec/>
Central Contractor Registration; Value Added Networks; current EDI sites and assistance center; online resources.

<http://www.acq.osd.mil/osjtf>
Open Systems education and training opportunities; plans and initiatives; studies; documentation.

<http://www.afit.af.mil/Schools/DL/schedule.htm>
Schedule of distance learning opportunities.

<http://www.gidep.corona.navy.mil>
Non-conforming products; diminishing manufacturing sources; engineering; metrology; reliability-maintainability for better readiness and reduced costs.