

# PM Interviews H. Lee Buchanan, Navy Acquisition Executive

## “Competition is the Best Way to Get Value”

**J**ohn Douglass left the Navy acquisition community in good hands when he ceded his position as Assistant Secretary of the Navy for Research, Development and Acquisition to H. Lee Buchanan Oct. 2, 1998. A former Naval flight officer, senior physicist, and experienced director of numerous advanced research projects/agencies, Lee Buchanan's appointment as Navy Acquisition Executive was a direct result of DoD's continuing efforts to find and place “movers and shakers” in key acquisition positions who would lead, question, innovate, and “rev up” the pace of acquisition reform.

A quick read of Buchanan's ambitious 1999-2004 *Strategic Plan* (<http://www.hq.navy.mil/RDA/stratplan.htm>) reveals a Navy acquisition community that is working very hard to establish a blend of shipbuilding and modernization programs that allow today's Navy to maximize benefits from current platforms while “buying smart” for the future. Further, he and his talented workforce are striving to institutionalize new procurement mechanisms that will meet or exceed DoD's acquisition reform goals at a pace that staggers the imagination. All this in the midst of the greatest upheaval in recruiting and acquisition the Navy has ever experienced.

In February, Gibson “Gib” LeBoeuf, Deputy Director, Navy International Programs and former DSMC Navy Chair, interviewed Buchanan in his Pentagon office. Buchanan's responses reveal a man who seeks openness and readiness in everything he articulates or signs into



Assistant Secretary of the Navy for Research, Development and Acquisition, H. Lee Buchanan (left) is interviewed in his Pentagon office by Gibson “Gib” LeBoeuf, Deputy Director, Navy International Programs, DoD, and former DSMC Navy Chair. Speaking of DSMC, Buchanan said, “I look on DSMC as our [DoD's] most influential institution for producing and maintaining a professional acquisition workforce ... I would like to see you go even further. This place [DSMC] should be a hotbed of new ideas, a place to try out new strategies and new technologies before and during real program experience ... I think there are many, many new ideas that are just begging to be tried.”

*Gibson LeBoeuf*, interviewer and coordinator of this article, is the Deputy Director, Navy International Programs, Department of Defense, and former Navy Chair, DSMC Executive Institute. *Julianne Kreidel*, article researcher, is a former editor for Program Manager magazine, Division of College Administration and Services, DSMC. Also a former Sailor, she is a Chief of Naval Information (CHINFO)-award winning writer and editor.

policy. He wants to communicate fully and openly with Congress, industry, the warfighters, and acquisition professionals; and do everything it takes to make sure Sailors and Marines are provided with the safest, most dependable, and highest-performance equipment available within fiscal constraints. How does



he plan to do this? With lots of help and support, he acknowledges.



*What plans (hopes, dreams, expectations, etc.) do you have for Navy acquisition going into the new millennium?*



When I came into office about a year ago, my first priority was to infuse the techniques of commercial business man-

agement into Navy acquisition. The two are different in many ways, of course — the Navy is not a business, and it would be wrong to contort it into one. But I found that the Navy was very slow to embrace too many beneficial commercial ideas.

Among the things we've worked on is to develop a small, common, and actionable set of performance metrics to use in assessing all ACAT [Acquisition Category] I & II Programs. This has been quite a lot of work but well worth the effort, both as a means for identifying potential problem areas, as well as helping to point the way to a strategy for recovery. We have been conducting these reviews about every six months, and I feel pretty good about the discipline that we are building.

As a next step, I would like to create a small, dedicated team of our most experienced managers to directly aid program management staffs with special needs and circumstances by providing in-house advice and consulting. In addition, I am very excited by the progress of our Program Manager Wargame series. These are direct simulations of complex program environments, replete with all the challenges of a real program compressed into only a few days. The few we have done have been very successful not only as a training tool, but also as a way to experiment with new strategies and techniques.

The harvesting of technology has been another focus. The Navy's future will depend on its ability to implement emerging technologies faster than its adversaries. I am not very satisfied that we have paid enough attention to this. One step in this direction was made when we established Dr. Jim DeCorpo as the Chief Technology Officer. We still need to provide him the "teeth" and influence to make the infusion of new technology as important as schedule and budget.

In the same way, we have focused a great deal of effort on Interoperability — at all levels: system with system, platform with platform, Service with Service, and ally with ally. About six months ago we es-

tablished Rear Admiral Kate Paige as Chief Engineer and charged her with making interoperability a priority, not by fixing problems after the fact, but by preventing them early in the acquisition process.

None of these is finished, of course, but all are well begun, and I hope to give each enough momentum to persist in the new administration.



*Assuming acquisition reform is not one final ultimate goal, but rather a constantly evolving mission that changes with new missions and goals, how will you ensure further success? How will you continue to implement changes already made under acquisition reform?*



To me, acquisition reform is really the process of getting back to basics — the efficient transformation of money into effective warfighting capability. The rub is in that word "effective," which is ultimately and completely defined by the threat. During the Cold War, we built up a very ornate process for acquisition that was just right for countering the Soviet Bloc. That threat changed, but our process did not. So in my mind, the task of "acquisition reform" is to strip away anything and everything of the current process that gets in the way of meeting the new threat — whether that means the way we establish requirements, gather and evaluate new ideas, manage our programs, or maintain the fleet.

To me the key is in creating a culture that is agile, anticipatory, and unafraid of change. I believe we are too concerned with the preservation of a process with too little attention to the result. We have been really good at establishing lots of new initiatives without demanding those initiatives result in real reform — changes in the process that are as specific and dramatic as the changes in the threat.

First we must decide what we need. I am 110 percent in back of the Chief of Naval Operations' push for a change to function-basing for requirements instead of the traditional platform-basing. His

IWARS [Integrated Warfare Assessment & Requirements System] process is driven more by the threat than by any obligation to preserve the infrastructure, and that is a theme I am trying to promote everywhere I can.

And requirements need to be somewhat malleable in the face of cost and schedule. If the last 5 percent in performance cost consumes 50 percent of the budget, then maybe it's time to challenge some assumptions for need. Or maybe a better strategy is to accept an incremental approach to the full requirement by providing block improvements to a system fielded early.

Then we must budget and finance our acquisitions. For instance, we often buy weapons at very uneconomical yearly quantities in the belief that this will preserve flexibility. In fact, this costs a premium – in some cases as much as 40 percent – that prevents us from obtaining other systems at all. Any successful company puts the business case on a par with performance and schedule. For the Navy, that would be a real reform.

And finally, we must manage our programs. Each uniformed manager of a major program wears a command-ashore pin signifying his or her authority and responsibility. That tells me that we should expect that each program manager should have the same authority and accountability as the captain of a ship at sea. Our system provides neither very well, and then we wonder why programs underperform, overrun their budget, and deliver routinely late. Changing that is real acquisition reform.

**Q** *In your testimony before the Subcommittee on Seapower of the Senate Armed Services Committee (April 21, 1999), you mention the Navy has only recently begun to recover from the sacrifices of long-term readiness in favor of short-term goals following the end of the Cold War. What modernization*



*“The task of ‘acquisition reform’ is to strip away anything and everything of the current process that gets in the way of meeting the new threat ...”*

*efforts have been achieved toward that end? What is left to do; in short, how soon will we be “back on top?”*

**A** I was, of course, referring to the recovery of our procurement accounts. I certainly didn't mean to suggest that we are not capable of accomplishing our mission, or that we are inferior in any way. Thus I don't think we ever sunk from being “on top.” But I will be happy to address our modernization efforts. Since the hearing you mentioned was focused on shipbuilding, I'll cover that first.

The big news on the surface side is the Land Attack Destroyer [DG-21] and the shift to electric drive. But modernization is not far behind, and includes plans to upgrade the combat systems of all but five of our Guided Missile Cruiser class ships [CG-47] for Theater Ballistic Missile Defense [TBMD] and land attack missions, while also incorporating a new

Area Air Defense Commander capability.

Just as important as combat improvements, Smart Ship upgrades to all Destroyer [DDG-51] and many Guided Missile Cruiser [CG-47] class ships are directed at manning reduction and easing maintenance burdens for our Sailors. The upgrades include an integrated bridge system (which will assist in piloting and collision avoidance) and an integrated condition assessment system for propulsion and auxiliary spaces (which will automate condition-based maintenance).

Regarding submarines and carriers, most of your readers are aware of the new Virginia class SSN and our plans for the next generation aircraft carrier, the CVNX – follow-on to the Nimitz class carrier. But they are less aware of our plan to refuel, rather than decommission, several 688 class boats and the use of the Incremental Maintenance Plan – of which the Refueling Complex Overhaul is a part – to extend the life of our Carrier fleet.

The big new player for the amphibious Navy is the Landing Platform Dock [LPD-17] and its ability to replace four ships with one. Less well known is the Landing Craft Air Cushion [LCAC] Service Life Extension Program, which combines major structural improvements with C4I upgrades – Command, Control, Communications, Computers, and Intelligence – and adds 10 years to the service life of these landing craft.

The Joint Strike Fighter is the future of both carrier and marine aviation. But until it is fielded, we are modernizing the F-14 Tomcat as a precision strike fighter to bridge the transition to the new F/A-18E/F Super Hornet. It is receiving several tactical upgrades, including the Low Altitude Navigation and Targeting Infrared Night [LANTIRN] system for autonomous target designation of laser-

guided bombs, a new radar warning system, and digital flight control system safety enhancement. We'll also continue to upgrade F/A-18s with Global Positioning Systems [GPS]; electronic aircraft-to-aircraft and aircraft-to-surface ship Data Links [LINK-16], which transfer contact and target data; Joint Direct Attack Munitions [JDAM]; and Joint Stand Off Weapons [JSOW], the follow-on to the Cruise missile.

The EA-6B Prowler, which proved so crucial in Kosovo, gets a new high-frequency [HF] and low-frequency [LF] transmitter and jamming system in Improved Capability III [ICAP III], as well as a new center wing section. The E-2C Hawkeye is getting improved engines, the Mission Computer Upgrade, and Cooperative Engagement Capability [CEC]. The S-3B Viking is getting numerous upgrades to replace obsolete and high-maintenance avionics systems.

We have a refurbishment plan for the P-3C Orion to extend its service life to 50 years. We're providing it with enhanced sensors and Standoff Land Attack Missile [SLAM] capability (which performed very successfully in Kosovo).

For helicopters, we are converting the SH-60B and F Seahawks to SH-60Rs, equipping them with Inverse Synthetic Aperture Radar [ISAR], Advanced Low Frequency [ALF] Sonar, and a modern computer suite—as part of the Navy's Helo Master Plan to reduce type, model, and series numbers.

For the Marines, the CH-46E and CH-53D Sea Knight helicopters are being retrofitted with numerous safety-related improvements. We're also remanufacturing the AV-8B Harriers to the Radar/Night Attack standard. This process upgrades them with a new engine, a Commercial Off-the-Shelf [COTS] onboard computer, and JDAM capability.

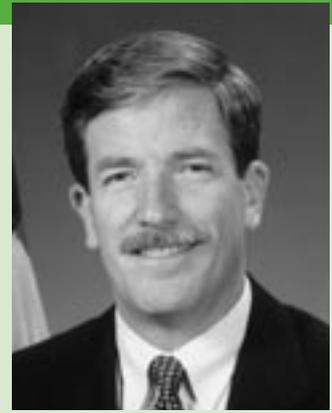


*What partnering initiatives with industry do you hope to adopt in order to develop affordable, technologically advanced systems for Navy and Marine Corps wafighters?*

## DR. H. LEE BUCHANAN

### *Assistant Secretary of the Navy Research, Development and Acquisition*

**H**. Lee Buchanan III was sworn in as the Assistant Secretary of the Navy for Research, Development and Acquisition Oct. 2, 1998. As the Assistant Secretary, Buchanan is the Department of Navy Acquisition Executive responsible for all research, development, and procurement of defense systems satisfying the requirements of the Navy and Marine Corps. He is also responsible for all acquisition policy and procedures within Department of Navy.



Prior to his appointment, Buchanan was most recently the Deputy Director of the Defense Advanced Research Projects Agency (DARPA). DARPA is the principal Agency within the Department of Defense (DoD) for research, development, and demonstration of concepts, devices, and systems that provide highly advanced military capabilities. As the Deputy Director, Buchanan was responsible for management of the Agency's high-payoff innovative research and development projects.

Prior to his appointment as Deputy Director, DARPA, Buchanan held the position of Director, Defense Sciences Office of the Advanced Research Projects Agency from 1989 to 1993. In that capacity, he directed \$300 million worth of research and development in opto-electronics, high-temperature superconductivity, advanced computational mathematics, advanced materials, advanced power sources, lasers, and chemical agent detection and destruction.

From 1985 to 1989, Buchanan served as Program Manager in the Directed Energy Office at DARPA, managing programs in electron beam technology, high-power lasers, and high-power microwave technology.

Prior to working at DARPA, Buchanan served as Applied Science Division Manager at Titan Corporation from 1982 to 1985. Prior to 1982, he was a Senior Physicist at Lawrence Livermore National Laboratory, and served on active duty as a Naval Flight Officer in the U.S. Navy.

Buchanan holds a B.S. and M.S. in Electrical Engineering from Vanderbilt University; and a Ph.D. in Applied Physics from the University of California, Berkeley/Davis. He is currently a captain in the U.S. Naval Reserve.

Buchanan is married to the former Elizabeth Clayton of Nashville, Tenn. They currently reside in Oakton, Va., with their children, Clayton and Margo.

**A** Let me dwell a little bit on the term “partnering.” To many, that term connotes reduced emphasis on competition as a means to drive prices down, quality up, inefficiency out, and new technology in. This is not what I have in mind. Rather, it should refer to a routine dialogue with industry and abolishment of the old “over-the-wall” mentality of the Cold War era. Again the idea is to recognize that smaller budgets and a need for agility means trading cost, performance, and design for multiple missions.

At the engineering level, this means that design becomes a collaborative, system-oriented enterprise with close coupling between the Navy user and the industrial producer – often a team of manufacturers. This Integrated Process Team approach has already demonstrated its value in the *SSN Virginia* – the lead ship in the next generation fast attack submarine – and the Landing Platform Dock [LPD-17] design program by increasing both system performance and life cycle cost.

At the management level, an initiative that is just starting to take hold at some of our larger contractors is the use of Corporate Councils. Comprised of corporate executives and representatives from the Services and the Defense Logistics Agency, these councils are charged with increasing the use of efficient, single processes on DoD contracts, which will result in more affordable weapon systems.

The change in thinking doesn’t stop at system delivery. We’re also introducing technology refresher clauses in our contracts. And we’re making greater use of performance-based Direct Vendor Delivery [DVD] contracts in which the producing contractor is also responsible for rapid delivery of critical repair parts and for improving the reliability of the repair parts and the weapons system as a whole. DVD contracts can be viewed as partnering or simply as innovative contracting, which achieves the same goals. DVD contracts make industry responsible for inventory management and use

Electronic Data Interchange to generate requisitions and provide status directly to the customer.

Even in S&T [Science & Technology], traditionally one of the most segregated functions, government and industry are finding that each does certain things better than the other, and that competitive sharing is most often the best way to stimulate innovation and creativity.

**Q** *Is it possible to keep pace, or even better, be ahead of the game in acquiring state-of-the-art equipment and systems for the Navy, while still staying within congressional budgetary constraints? Is there a concern of having to “make do” with lesser technologies?*

**A** This is a very difficult question and one with profound implications. The key is in recognizing that for the first time in history, the time scale for technological evolution (18–24 months for computers and microelectronics) is much shorter than most other pertinent time scales (10–15 years for acquisition, 20 years for a Sailor’s career, 40–50 years for a ship’s life).

We must, therefore accept that constant refreshing of technology, routine upgrades, and the changing configurations that go with them, are the norm and not the exception. Here we must take several pages out of commercial industries’ book. To survive in this arena, companies have no choice but to embrace open architectures, flexible manufacturing, just-in-time inventory planning, and enterprise resource planning to drive cost down, quality up, technology in, and inefficiency out. The Navy, suffering from both overvaluing the status quo and undervaluing the access of our adversaries to the most modern technologies, has mastered none of these concepts.

I believe that S&T, particularly, needs some attention. Technological superiority is now, as it has been for some time, our long-term strategy for success. But we have too long relied on our own in-house production of our most critical technologies and have failed to construct

an efficient process for turning the results of those developments into warfighting capability. In short, our S&T structure, while very productive, is not well enough connected to our acquisition process. The reality of the situation is that the S&T budget will not increase much in the near term. So we must dramatically increase the yield of each and every S&T dollar. That will require some very big changes in the way we do business.

**Q** *Your FY 2000 plan calls for a lot of shipbuilding across the FYDP [Future Years Development Plan]. Are we trying to outpace some, as of yet unidentified threat? Does this fall in line with your defense strategy laid out in the QDR [Quadrennial Defense Review]: Shape – Respond – Prepare?*

**A** This is really a question that should be put to the force planners in the Office of the Chief of Naval Operations [OPNAV]. But I will go this far: The size of the Fleet (number of ships) can sometimes be driven by the size and capability of a particular, and sometimes driven by a requirement for agility and diversity in meeting multiple and geographically disperse threats. We have just left an era in which the former was most influential and are entering an era in which the latter is. To the extent that the capability and agility of platforms are driven by engineering and technology, acquisition becomes important. What you’re seeing in the shipbuilding plan is a healthy, new partnership between the acquisition and requirement side to meet the very poorly known threat of the future.

**Q** *Beyond the obvious goals of ensuring a technologically superior Naval force, capable of sustaining a “Forward from the Sea” presence, it appears one of your other priorities is ensuring defense shipbuilders are able to compete in the world’s market. Why is this so important to the overall picture of providing superior equipment for warfighters?*

**A** Two reasons. First, cost goes down with competition, and competition requires multiple shipyards. But the present vol-

ume of Navy ship construction simply can't support multiple yards at the most economical capacity. Commercial shipbuilding can add the difference. But, there's another, perhaps more subtle reason. If our shipyards can become competitive in the global shipbuilding industry, it will be because they have implemented all of the very best commercial practices and technologies. That is to our benefit in quality as well as cost. So we see it as a definite win-win.

**Q**

*Turning your attention to international issues if we may, what is your view of the DoN assisting U.S. industry in capturing international sales? We understand that OSD is promoting a "partnership" role between U.S. industry and government. How do you see this working?*

**A**

Let us not get confused. Accepting responsibility for "capturing international sales" and being a good partner can be two very different things. One does not necessarily imply the other.

To my mind, a partnership is a case-by-case cooperation built on specific, common interests. This is often the case – it is the interest of our defense companies to increase sales and thereby increase profits. When companies succeed individually against foreign competitors, it's generally good for the industry as a whole. The Navy can benefit as well. The smaller benefit is that each sale can reduce the Navy's recurring and nonrecurring costs and represents a savings in future acquisition. But the larger benefit is that it promotes interoperability with potential allies on which joint and coalition operations critically depend. In this case increased sales equals satisfaction of common interests equals good partnership.



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But sometimes our interests don't coincide, for instance, in the transfer of advanced technology that would put us at an operational disadvantage against the potential purchaser or someone with whom they might deal later. In those cases, we might discourage that deal by denying certain license requests – dissimilar interests and no partnership beyond the obligation on the Navy's part to render a decision without delay.

So you can appreciate my view that while I do not feel it is the Navy's job simply to "capture International sales" for industry, I do feel that we have an enabling role in such ventures and should be activist when it is to our advantage.

**Q**

*What is your view of cooperative development programs with allied countries? How does the Navy select appropriate programs upon which to cooperate?*

**A**

Cooperative development programs are very important in the Navy's overall approach to systems acquisition and research and development. In fact, due to our constrained budgetary climate, cooperation is becoming increasingly important in terms of not duplicating the efforts of our allies; of leveraging our scarce acquisition investments; and of taking advantage of our fine technology and some innovative approaches, which our allies are pursuing to meet shared requirements.

Not all potential cooperative efforts turn out to be good deals, however, so it's too simplistic to sign up to a blanket endorsement of the concept just to increase their number. In many ways, these programs mimic international sales; both have potential

for multiple benefits and both offer significant hazards.

The trick is to assure that we collect as much value as we invest. First, we need to decide clearly what we are trying to get out of the deal. It is seldom as clear as price and product. Too often we enter a deal with far too little thought of what we want or how to seize the good result when it appears. For instance, if the objective is to jointly develop technology, then we must know how we are going to take possession of the technology in the event of success. It won't happen automatically.

Next, we must execute with the end result constantly in view and be ready to push away when promise fades. I believe that any potential partner is making that same calculation for himself. This is not to say that we can be fickle. When we make a commitment, we must be prepared to honor it. But the inverse is also true; we should only commit when we are prepared to follow through.

As to where we find our deals: Our Systems Commands and Research and Development [R&D] facilities are very aware of our allies' acquisition and research and development programs; and often, through the means of our hundreds of Data Exchange Agreements, they are the first to bring cooperative opportunities to the table. Our Senior National Representative, Navy Rear Admiral Richard D. West, has organized meetings with his counterparts from 14 countries to harmonize naval requirements. We have the Staff Talks headed by Navy Rear Admiral Kenneth F. Heimgartner of the CNO Strategic Studies Group, with 17 countries, which deal primarily with operational issues, but are still a venue in which cooperative opportunities often surface. Navy International Programs Office, headed by Navy Rear



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Admiral Jim Maslowski, my point man on international issues, conducts naval acquisition reviews with three countries, and he is working hard to bring in all of our closest allies in discussions of this type. And our Office of Naval Research [ONR], headed by Navy Rear Admiral Paul G. Gaffney II, has two fine “outpost” organizations – ONR Pacific in Tokyo, and ONR Europe in London – which bring R&D cooperative opportunities to our attention quite frequently.



*Over the last decade, we have seen Foreign Military Sales [FMS] sales decline, and to some degree we have seen Direct Commer-*

*cial Sales [DCS] pick up the slack. What is the meaning of this trend? Is the trend inevitable or can DoN actions reverse the trend? Is the trend a “good” or “bad” one?*



I agree that there has been a trend over the last decade for some of our allies to migrate to the use of Direct Commercial Sales instead of Foreign Military Sales, and I think we understand why. First, the defense acquisition establishments of our allies have become more sophisticated. They are now fully capable of setting forth their requirements, specifications, and acquisition strategies and dealing directly with industry around the world. Second, our international friends, like us, have concluded that competition is the best way to get value. Therefore, the trend toward DCS is completely understandable. It was only recently that we renovated our FMS procedures to enable us to compete in international competitions.

Can the migration from FMS to DCS be reversed? I'm not sure it should be reversed since I don't know whether the trend is a good or bad one. What the FMS mechanism offers to an international customer is facilitation and streamlining of the process. They will tell us if we have been successful or not.



*We recognize that at the direction of OSD, DoN and the other Services have been tasked to reengineer the FMS process. Can you comment on the Navy's progress to date and give some examples of programs where this reengineering has/is occurring?*



One of the prime ways we, the Navy, can contribute to international sales is by working to make the FMS process “customer friendly” to foreign buyers, and this means drastic reductions in time and paperwork.

In 1998 the Navy International Programs Office [Navy IPO] was designated a Reinvention Laboratory. Streamlining would be pursued in three phases. In Phase I, Navy IPO put its heads together with representatives of the U.S. defense industry to identify the problems. In Phase II, which ended in 1999, they were able to identify 150 separate issues and complaints that led to 12 initiatives. We have already initiated Phase III, the implementation phase.

One of the initiatives, Team USA, is an international “Integrated Product Team” to support Navy acquisition. Another has to do with improving what we refer to as “customer responsiveness.” Navy IPO, working with the Defense Security Cooperation Agency, has taken steps to streamline the issuing of Letters of Offer and Acceptance, the means by which an FMS sale and associated contracts take form. A third improves up-front planning.

It is unlikely that all of these initiatives will deliver all of the desired result. But some will, and these will be the basis of real change in the system.

**Q** *In the area of shipbuilding, we have two questions. First, can you tell us what's happening with the DD-21 Class Land Attack Destroyer?*

**A** About two months ago the Navy awarded a Contract Phase II agreement for Initial System Design to the two industry teams competing for DD 21. This will continue industry's initial design efforts through Fiscal Year 2000 toward the competitive down-selection to a single team in Fiscal Year 2001. I have been very impressed with the technical innovation shown by both industry teams thus far, and we are committed to make the investment necessary to ensure the teams' success as they drive toward the aggressive cost and performance objectives for DD 21.

Several weeks ago, the Secretary of the Navy announced that both teams would pursue a fully integrated electric power

system including modern electric drive. Electric drive offers immense opportunities for redesigning ship architecture, reducing manpower, improving shipboard life, increasing survivability, and offering more power for warfighting applications. And so the race is still on, and I am confident that this competition will give us the very best ship possible.

**Q** *Also in the area of shipbuilding, it seems each time a major airliner goes down or even the recent JFK tragedy, the Navy's best search-and-rescue teams are called in, most notably the crews assigned to USS Grasp. Are there any plans to expand upon this element of your surface Navy? What about the possibility of interoperability with the Coast Guard to do the same job?*

**A** USS Grasp is one of the Navy's four ARS-50 [Auxiliary Rescue/Salvage] class salvage ships. These ships, as well as five USNS T-ATF salvage tugs, are specifically designed to conduct ocean salvage and towing operations. They do their job superbly, and I know of no plans to expand the Navy's salvage posture. With regard to interoperability with the Coast Guard, the Navy and Coast Guard have refined their mutually supportive roles on projects like the EGYPT AIR operation. Their capabilities are complementary – while the Coast Guard ships are not designed to support salvage operations, they are very good as platforms for sonar search systems, and in other support roles during the course of an operation. On the other hand, the Navy does have a combat salvage mission and a capability (specifically diver support), which was purposefully designed into ARS-50.

**Q** *Restructuring, reengineering – these are catch phrases we often hear with regard to acquisition; is there more of this kind of thinking in the next five years? Ten years?*

**A** I think the day is gone when we could depend on an infrastructure or a set of business processes maintaining currency for very long. In fact, I believe that we should expect change to be constantly

and fluidly moving from one organizational arrangement to the next as driving circumstances demand. This is certainly what the commercial sector has found, and I know of no reason to think that we are different.

Of course, all of this has been accelerated by the explosion in information technology [IT]. In previous years, the military was out front in the development and implementation of IT, but that has not been true for a number of years. We must now learn to be technology followers – not a comfortable role. I think that for the Navy, a big enabler and even driver, will be the Navy and Marine Corps Internet. For the first time, we will have a common and fully interoperable network. And riding on top of that network will be our implementation of Enterprise Resource Planning [ERP]. Together, we will be able to plan and implement decisions based on robust and accurate data. This culture of constant change will become easier and less threatening to all of us, and we will learn to use it to our advantage.

**Q** *Research is also a priority. Let's talk about the Basic Research Program and how it differs from all others (driven by the needs of the Navy and encourages risktaking). What successes have already been realized, and what others are you anticipating?*

**A** You are aware that my background is very much in the R&D world, and so you can imagine how much time I have spent worrying about how best to keep our military, and now our Navy, at the leading edge in technological capability.

It used to be, of course, that the dominance of the military in every technology was the core of our military strategy – remember phrases like *technological superiority, competitive strategies, and force multipliers*? The military was responsible for most significant advancements. In the 1980s, however, commercial industry was fighting its own war and developing its own technological superiority. It did not take long for commercial industry to outpace developments in the

military, particularly in micro-electronics and information technologies.

More importantly, the way technology is created and used in commercial industry has changed. Because the technology content of products is so much a driver of market share; and because product development cycles are so short, much of the energy previously devoted to the creation of technology is now dedicated to its deployment.

One of the first things I did was to begin to create a similar environment in the Navy. Though we have some wonderful organizational machinery for producing new technologies – the Office of Naval Research is world class – and we are natural and voracious consumers of technology, there was too little fabric for connecting the two. And so we created the position of Chief Technology Officer as the one person most concerned with getting new technologies out of the lab and into fielded weapon systems.

It is significant that our investment philosophy is changing as well. During the Cold War, we had to maintain a very broad, in-house development effort to make sure all the bases got covered. Now, with so much going on in the commercial sector, we can't hope to cover that kind of breadth. And we shouldn't have to if we can create a good capability for "technological reconnaissance" and an efficient process for bringing technology in from outside. Again, we need to go to our commercial brethren for lessons.

So, I do see some big changes in our R&D process in the near future – not so much because we want to, but because we have to. Otherwise, our adversaries who have a credit card and a Radio Shack catalog may have better access to advanced technology than we do.



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*Smart Ships, like USS Yorktown, have been in the news a lot lately; a wonderful example of naval research and development, with a strong test phase completed. Will all Navy ships one day be "Smart?" What about the Sailors aboard Smart Ships: with fewer Sailors needed, is there any chance of their obsolescence? Or are we as some*

*say fostering a smart, technologically advanced generation of "Smart Sailors" to go with our "Smart Ships?"*

**A** I've heard it said that a major difference between the Army and the Navy is that the Army equips the man and the Navy mans the equipment. Traditionally, there's been a lot of truth in that. It arises from an obsolete view of people that Secretary of the Navy Richard Danzig refers to as the "conscriptment mentality" – the idea that Sailors are a cost-free commodity to be squandered without consequence. In many ways we are still relegating valuable human capital to the most repetitive, menial, and unsatisfying jobs while wondering why life cycle cost is so high and morale is so low.

To me, Smart Ships integrate people and technology together so that the two complement each other. It's really a classic systems design problem with the human as the smartest component but not necessarily the most patient, the most sensitive, or the most tolerant of harsh environments.

Will the Sailor disappear? Well, the GENDET – non-rated seaman – might. The mess cook might. The paint chipper might. But the smart, highly trained, multidimensional warfighters will flourish and will work as one with their crews and their ships because they're allowed to do what they do better than any machine because machines are doing what they do best. There will be fewer of them, but they will be challenged, rewarded, and retained.

The Navy embarked on the prototype installation of Smart Ship technologies onboard USS Yorktown (CG 48). The success of Yorktown has led to the ex-

pansion of this program throughout the Fleet. All 27 ships of the Ticonderoga class are programmed for installation within the current FYDP, and a parallel effort has been initiated for the 57 ships of the Arleigh Burke destroyer class. Additionally, we have completed the prototype installation of Smart Ship technologies in *USS Rushmore* (LSD 47), launching the Smart Gator program; and are on track initiating the Smart Carrier program.

**Q** Keeping in mind the need to stay within budgetary constraints, you've already begun focusing on fewer technological areas. What are some of those areas? What scale do you use in order to determine precedence of where you'll focus time and monies? Is there a negative side to "focused funding?"

**A** We have already talked about the difficulty of covering the great breadth of relevant, new technology using the old process even if the budget was not the constraint. Let's not forget that one of the main purposes for conducting R&D is to make the Navy a smart buyer in acquisition. So, the question is not which technologies do we focus on and which can we do without; rather, it is which ones must we do in-house because we cannot find it on the outside.

To be sure, there are technologies that fit this bill. Underwater acoustics, advanced explosives, exotic sensors are all areas that need continuous Navy involvement. But framing the issue this way allows an interesting new perspective to emerge. There are some technologies that are just so important that we can't risk developing them in-house because it would take too long and ultimately take the wrong direction. I put microelectronics and most information technologies in this category. These technologies are just moving too fast for the Navy to expect to remain competitive.

So, then, how do we stay current? I believe we must develop within the Navy a new function. Just as our intelligence community is very adept at learning the

technologies being developed by our adversaries, so we need a similar window into the future technological directions of our own industry. Only with this view can we hope to make good "make/buy" decisions.

**Q** Congress always seems to want to focus on the total number of ships, subs, and planes the Navy has. Call it downsizing, or right-sizing; can your Department realistically keep pace with the demands of the 21st century with a smaller force? Can super ships, replete with all the best science and technology can offer, really take the place of a downsized, rightsized Navy and Marine Corps?

**A** We touched on this before earlier. It is very tempting to respond to budget reductions by consolidation of capability on fewer platforms. But this ignores the fact that agility and dispersion of action are also necessary capabilities. So it's a balance. Given that the planet is as big as it is, and the time it takes to get from one spot to another, given the number of places and the kinds of situations where we want our influence, our numbers can't get smaller without giving up something.

**Q** You've been a frequent visitor to the DSMC campus. What do you like about our college, or what do you think we could do better in support of giving Sailors and Marines the acquisition education they deserve?

**A** I look on DSMC as our most influential institution for producing and maintaining a professional acquisition workforce. You have established acquisition as a profession and set the standards of the professionals that you train. I would like to see you go even further. This place should be a hotbed of new ideas, a place to try out new strategies and new technologies before and during real program experience. I believe DSMC should become the main point of entry for all of the commercial techniques I've been talking about. I'm a big fan of simulation and gaming

as an alternative to traditional classroom work. We continue to have trouble getting our new program managers to the 14-week Advanced Program Management Course [PMT 302], so I would want to implement "distance learning" for delivery of part of that entire curriculum. I think there are many, many new ideas that are just begging to be tried.

**Q** What legacy does Lee Buchanan want to leave when his title becomes former Assistant Secretary of the Navy (Research, Development and Acquisition)?

**A** Two years is really not enough time to create a legacy in this business. When I took office, I aspired to do three main things during my stay.

- First, I wanted to give our program enough focus and rigor that we can really manage the outcome rather than merely accept it.
- Second, I wanted to firmly plant the idea that systems can't be designed and acquired separately if they will be expected to work together in the end. In other words, interoperability must be designed in up-front.
- And third, I wanted to put into place a process and a culture that actively guides and directs new technologies into systems rather than waiting for it to find its own way there.

If I can do these three, then my time here will have been well spent.

**Q** On a personal level, would you tell us the best advice you ever received to prepare you for the job you have today, be it from an associate, relative, or friend?

**A** Well, I hope this doesn't sound too mushy, but there's an old song that has words that I think of often. They go something like, "Work like you don't need the money, dance like there's nobody watching, and love like you've never been hurt." In less poetic words, "Don't take yourself too seriously and have fun." That's what I would pass on.