

**TESTIMONY**

**TO THE UNITED STATES SENATE**

**COMMITTEE ON ARMED SERVICES**

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I do not have to tell this Committee that this is a critical period for the future security of the United States. Our defense budget is being cut significantly to help pay for the Nation's debt and a significant share of these cuts are coming out of R&D. Clearly, we are preparing for 20<sup>th</sup> century warfare, but not 21<sup>st</sup> century needs.

Yet the world is not at peace. We have to be concerned about ISIS, Syria, the Crimea, the South China Sea, nuclear weapons and ICBM proliferations, terrorism, and cybersecurity--as we have become more and more dependent on cyber, and as the threat capability becomes more real (as the recent OPM cyber attack alerted us).

The overall security problem is compounded by the rising costs of current weapon systems and the high cost for their support, as well as by the lengthening development times for new systems--for example, the F-22 took 22.5 years. This long cycle is counter to the rapid and continuing changes occurring today in the areas of both technology and geopolitics.

Without question, **significant change is required** in the way DoD does its acquisition of goods and services and, to achieve this, the historical data is clear. To achieve significant change, two things are needed.

1. Widespread recognition of the need for change; and
2. Leadership--with a vision, a strategy and a set of implementation actions.

On a positive note, the first of these is demonstrated by the current SASC and HSAC proposals, under the leadership of Senator McCain and Representative Thornberry, for significant defense acquisition reform. Now we need agreement, from the Executive and Legislative branches, on the specific actions required to address the need for **greater security with fewer dollars**.

In the past, the US defense and economic competitiveness strategies have been based on "technological superiority." But today (as shown in figure 1) the commercial and international worlds are greatly exceeding the federal government's expenditures on R&D. Since there is a correlation between R&D expenditures and results achieved, there are many critical national security areas in which the DoD is no longer leading. For example, the French are the leaders in night-vision devices. Also, when the DoD decided to armor their next generation infantry fighting vehicles (since road-side bombs were the No.1 killer of US soldiers and marines in Iraq and Afghanistan), they chose

armor from Israel (and the foreign firm agreed to build the armor in the US). Clearly, the Congressional and DoD cut back in the share of the budgets going to R&D must be reversed in order for the DoD to achieve technological leadership in the 21<sup>st</sup> century.

UnderSecretary Frank Kendall stated, in “Better Buying Power 3.0,” the “removal of the barriers to buying commercial” is an area that has to change. Figure 2, from the Packard Commission, compares commercial semiconductors to military-specification semiconductors, and shows that the commercial parts are an order of magnitude cheaper, more than an order of magnitude more reliable, and more technologically advanced. But, there are significant “barriers” to commercial firms wanting to do business with the Department of Defense—it is not expected to be a growth market, the profit margins are mandated to be low, and the incredible number of regulations for doing government business drives up costs and also drives away commercial firms. In fact, Figure 3 shows that the Code of Federal Regulations is now around 180,000 pages (and growing by 2,000 pages a year). In 2008, OMB and SBA estimated the regulatory compliance cost to be 1.752 trillion dollars.

In 2005, to test the desirability of using commercial parts (to lower the costs of weapon systems), the Joint Direct Attack Munition, or JDAM (see Figure 4), which is a precision-guided weapon to convert “gravity bombs” into “smart bombs” was allowed to use commercial parts for electronics, sensors, and actuators. The result was greatly improved performance at dramatically lower cost. In fact, an independent cost analysis determined that by using military specified parts the cost would be \$69,000 each, while the actual price, using commercial parts, is \$18,000 each. Since the DoD had tens of thousands of gravity-dropped dumb bombs to be converted to smart bombs, **the use of commercial parts on JDAM resulted in very significant savings, and the performance greatly improved.**

To achieve the required overall DoD objective of “greater capability for fewer dollars,” the driving requirement must be “**affordability.**” This can be achieved by six specific actions:

1. **increased competition**, at both the prime contractor level and at the subcontractor level—for the acquisition of both goods and services—with awards based on “best value,” not simply “lowest price.”

The benefits of competition, both in performance gains and in lower costs, have been demonstrated over and over—and is the basis of the American economy. Similarly, in over 3,000 examples of public/private competitions for non-inherently governmental work, the average savings has been over 30%; but these so-called “A-76 competitions” have been outlawed by Congress. Without a doubt, for all future acquisitions of goods and services, at both the prime contract and subcontract levels, competition must be considered.

2. Greater **civil/military industrial integration** in both hardware and software by removing the barriers to buying commercial

The JDAM example clearly proves the value of civil/military integration. A second example I might note is the dramatic price increase that occurred when Boeing was forced, by the government, to separate the building of military and commercial transports. Boeing had been building both in the same production facility and achieving lower cost for both by taking advantage of the economies-of-scale from the higher combined volume.

3. Increased **emphasis on funding for innovation**. The fact that both Congress and the DoD have decided to cut the R&D budgets as the total defense budgets are declining, is a clear demonstration of the resistance to innovation (i.e. the resistance to change) and an indication that the US will no longer be able to lead through “technological superiority”—especially, since (as shown in Figure 1) both the US commercial world and other countries are significantly increasing their R&D budgets. However, the DoD must continue to focus on innovation investments in order to stay ahead.

I might note, at this point, that recent data (as seen in Figure 5) indicates that the greatest source of significant innovation comes from government-supported small-business-innovative-research (SBIR). It is a no brainer that this should continue to be supported.

4. Greater use of **innovative financing techniques** such as leasing and public/private partnerships. Currently many other countries are using leasing as a way to spend less and still get the needed performance. This is a technique

we all use regularly; for example, if we need a car somewhere across the country, we do not buy one, we just lease it when we need it.

In fact, DoD decided to use leasing for the tanker. Unfortunately, there was a criminal personnel scandal (in 2002) which, by the way, had nothing to do with the concept of leasing, that killed the deal. I believe the potential benefits are sufficient to explore the concept again – especially when the leased items have dual-use value, both for commercial and military applications.

5. Greater emphasis on the need to **overcome the institutional resistance to change**. A critical change required is greater use of innovation, with a focus on higher performance at lower costs.

To overcome the Congressional and DoD's institutional resistance to change, the literature is clear, it takes two things to implement successful change:

- **General agreement on the need for change**. Today, the HASC and the SASC acquisition reform bills, show that there is widespread agreement on the need for change.
- Therefore, what is required is legislative and executive branches' **leadership** pushing for the needed changes; specifically, to get more capability for the available dollars--with a focus on the six areas covered herein.

6. A focus on the **education and training of the DoD's acquisition workforce**.

The last change required is reform of education and training for the DoD's acquisition workforce. This is clearly recognized in both the SASC and the HASC acquisition reform proposals.

A 2009 Defense Science Board Task Force found that 55% of the DoD acquisition workforce had less than five years of experience and that most of the senior, potential mentors, had retired. For example, in 1990 the Army had five general officers with contracting experience, while in 2009 it had none. Instead of educating the acquisition workforce on compliance with the 180,000 pages of the code of federal regulations, they should be taught about "best practices." Also, instead of solely case studies on the acquisition of prior weapon systems, they should learn with comparable examples of complex commercial

acquisitions (faster and at lower costs).

Finally, the DoD acquisition workforce should be encouraged to attend relevant Graduate school classes (at government's expense). The cost is small but the potential benefits are significant.

Senator McCain and Senator Reed, thank you both for the opportunity to express my views on the needed defense acquisition reforms at this critical point in our Nation's security posture.