



# Pentagon acquisition policy

## Three-quarters right, one-quarter broken

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# INTRODUCTION

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The American defense debate is afflicted by a certain schizophrenia about how the Pentagon buys its weapons and other equipment, and about the state of America's defense industrial base. On the one hand, the media narrative often fixates on horror stories concerning \$600 toilet seats, billion-dollar aircraft and ships, fighter jets costing three times what was originally expected, and programs canceled for poor performance. The Department of Defense went into the Iraq and Afghanistan wars only moderately well prepared, in terms of equipment and training, for the kind of fighting that ensued, and took several years to find its stride. Eisenhower's warnings of a military-industrial complex bilking the taxpayer and putting the nation's economy at risk still echo today—but now it is the military-industrial-congressional complex that adds parochial politics and log-rolling appropriators to the witches' brew as well.

But there is a happier side of the story to tell as well. Whenever they go into combat, American armed forces have the best equipment in the world. This has been true since World War II, and it constitutes a huge strategic advantage for the United States—as seen, most notably, in Operation Desert Storm in 1991, the opening stages of the Afghanistan and Iraq wars in 2001 and 2003 respectively, and the quieter successes of deterrence policy in places like the east Asian littoral in recent decades. Whether overhyped or not, all the talk of a revolution in military affairs in the last quarter century has largely been the result of breakthroughs in stealth, satellites, precision-guided munitions, drones, computing, and other high-technology capabilities that have given the American soldier, sailor, airman, airwoman, and Marine enormous advantages against their enemies. Moreover, in modern times, the United States has bought all these capabilities while spending around 4 percent of gross domestic product on its military, less than half the average in Eisenhower's day. U.S. weapons manufacturers also lead the world in arms exports, suggesting that it is not just Americans who see the value in what the U.S. defense industrial base develops and produces.

As the defense budget has declined, so has the size and shape of the industrial base. What was a huge national resource in World War II, when most major American industries were legally required to contribute to the war effort, became a more streamlined version of the same system in the Cold War years. Since the Cold War ended, however, many companies have gotten out of the defense business, leaving most weapons production to a handful of prime contractors focused mostly on the

military mission. The broad flow of ideas, technologies, and personnel back and forth between civilian and defense worlds that characterized the middle decades of the 20th century is now largely gone.<sup>1</sup> Residual defense industry remains very impressive, and a national treasure. But in areas such as fighter jet, bomber, space launch, submarine, and aircraft carrier technology, the United States is generally down to just two or sometimes just one main producer. And in new realms such as cyber, where generational changes in technology occur every couple of years rather than every couple of decades or longer, the reams of federal acquisition regulations and slow pace of the defense acquisition and contracting world leave America's armed forces at risk of falling seriously behind the times. Moreover, with defense budgets dropping towards 3 percent of GDP, or less, in the years to come even as individual weapons become more expensive and manpower costs continue to rise, affordability and efficiency issues loom large. The defense industrial base is now somewhat fragile in a way it was not before. And the U.S. Department of Defense, while still accounting for nearly 40 percent of global military spending, is itself at risk of losing the technological advantages that it has enjoyed roughly since the 1940s. Future innovation may be at risk, even if recent and current trends have been relatively good for this country.

What to do? How to fix the system without throwing the baby out with the bathwater? How to retain all that is working well in defense acquisition—preserving the cutting-edge character and high quality of most American weapons—while building a viable system for the 21st century that is innovative and affordable?

The main argument of this paper is that the acquisition system of the American Department of Defense is in fact fairly good. In fact, overall, it is excellent, if by the system one means the overall performance of the country's laboratories, main defense contractors, and military personnel who then operate the equipment that the U.S. taxpayer has purchased for them.

But if it is excellent, it is three-quarters so. There are major remaining problems. Some involve a tendency still to over-insure by buying weaponry that is more expensive than need be at times. I have written about this elsewhere, as with my book *Healing the Wounded Giant* (Brookings Institution Press, 2013), and would favor less ambitious purchases of F-35 combat jets as well as a more economical approach to nuclear force modernization, among other changes to existing defense programs and plans. This problem arises at the high strategic levels of the decisionmaking of the military service

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<sup>1</sup> See William J. Lynn, "The End of the Military-Industrial Complex: How the Pentagon Is Adapting to Globalization," *Foreign Affairs*, vol. 93, no. 6 (November/December 2014), pp. 104-110.

chiefs and their civilian leadership; it is less a weakness of the acquisition system itself. Other problems, more the focus of this paper, arise from the excessive bureaucracy and red tape associated with the acquisition process, which drive away certain types of potential providers whose technologies could be of great benefit to the U.S. armed forces.

The situation was captured pithily in a session at Brookings on April 13, 2015.<sup>2</sup> Frank Kendall, Under Secretary of Defense for Acquisition, Logistics, and Technology, rated the U.S. military acquisition system as meriting a high grade—a B+, maybe even an A-. Former Deputy Secretary Bill Lynn, now CEO of Finmeccanica USA, agreed with that grade if one was referring to major weapons platforms. But he gave the system a C- or so for anything involving computers, information technology, and Moore's Law. He also argued for taking better advantage of opportunities for more economical purchases of equipment that might be provided by foreign firms, smaller firms, and non-traditional providers in some cases. These were of course simplified depictions, which both Kendall and Lynn graciously provided only at my prodding, so they should not be interpreted overly literally. But they do capture the essence of the strengths and weaknesses of the existing system in a memorable way. And in so doing, they help point the way forward towards next steps in reform.

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<sup>2</sup> Frank Kendall, "Acquisition reform: Increasing competition, cutting costs, and out-innovating the enemy," The Brookings Institution, Washington, DC, April 13, 2015.

# CONCEPTS AND OPTIONS

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It is useful to get some basic concepts and options on the table first. The Pentagon can structure its weapons programs in various ways. It can use various legal and financial contracts with private firms to acquire that weaponry and equipment. It can follow different types of internal procedures in making its decisions and overseeing subsequent development and production. And it can take various approaches towards making itself “user friendly” as a buyer—through the systems of regulation that it sets up and expects contractors to comply with. Each of these categories of options and instruments is discussed further below.

These various options and instruments were generally devised at various points over the last half century or so. For example, fixed-price and incentive contracts became widely used in the 1960s, during the Kennedy and Johnson administrations.<sup>1</sup> Deputy Secretary of Defense David Packard, previously an important computer executive, promoted a variety of reforms in the late 1960s and 1970s including greater use of prototyping to make development more realistic (“fly before buy”) and stronger roles for empowered program managers who became more individually accountable for various weapons programs. Packard developed some of these ideas further through the 1980s commission bearing his name as well.<sup>2</sup> In the 1980s under Secretary of Defense Weinberger, the Pentagon sought to employ more long-term contracts, among other innovations.<sup>3</sup> Various reforms in the 1980s including the Carlucci initiatives (named for the deputy secretary of defense of that era) and Goldwater-Nichols legislation strengthened the role of both a top civilian acquisition executive and, in a partial throwback to pre-McNamara practices, of the military services as well (reducing somewhat the role of the chairman of the Joint Chiefs). Fixed-price contracts became more popular, too. That period also saw the Nunn-McCurdy legislation that put a strong presumption on canceling programs that greatly exceeded promised costs.<sup>4</sup> Greater use of commercial off-the-shelf technologies was promoted at various times including during the Secretary of Defense William Perry years in the 1990s.<sup>5</sup> New ways were found to

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<sup>1</sup> J. Ronald Fox, *Defense Acquisition Reform, 1960-2009: An Elusive Goal* (Washington, DC: Army Center of Military History, 2011), p. 36.

<sup>2</sup> *Ibid.*, pp. 43-79, 129-131.

<sup>3</sup> *Ibid.*, p. 99.

<sup>4</sup> *Ibid.*, pp. 106-107, 119-120.

<sup>5</sup> *Ibid.*, p. 172.



get technology rapidly to the warfighter in the George W. Bush years. And fixed-price incentive contracts—a modified form of the earlier fixed-price contract approach—have been a centerpiece of the Better Buying Power initiatives of the Obama administration.<sup>6</sup>

Each of these deserves a bit more explanation:

### *Structuring programs*

If the Pentagon decides that it needs say 100 fighter jets, it has some fundamental choices about how to request that firms bid on how to build them. It can award a single *winner-take-all* or *sole source* contract at some point after basic proposals are filed and prototypes (or at least initial research and development) completed. It can purposefully divide the lot of 100 into two pieces, in a *split-buy contract*, to ensure that two companies will have their design, testing, and production capacities sustained by that program. It can use competition throughout the life of a program—buying say 10 planes a year (five from each company at first, notionally), and then evaluating the costs and quality of each company’s product as it decides how to divvy up the lots in subsequent years, rewarding the company that is more efficient and reliable with a larger share of future allocations.

There are other options, too. Suppose that the Department of Defense knows it will need 1 million new computers over the next decade, and would like to start buying them in five years. One approach would congregate the entire buy into one batch and one program. Another, recognizing how such purchases are typically handled in the private sector, would buy perhaps 100,000 at a time through *incremental* procurement, while expecting the contractor to comply with certain *open-system* interoperability standards to allow for the ensuing 900,000 computers that would still be needed through subsequent programs to be able to “talk with” the first batch as well as each other.<sup>7</sup>

This discussion raises a related point—that of commercial off-the-shelf technology (COTS). Often, the Pentagon places many detailed demands on the types of equipment it wants. The motivation is reasonable, given that defense equipment must operate in rugged and stressful conditions. But at other times, this approach deprives DOD of innovations and efficiencies that the private sector is generating for regular civilian customers. As such, some Pentagon reforms have attempted to promote the use of COTS products where possible.

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<sup>6</sup> Honorable Frank Kendall, “Better Buying Power 3.0,” Interim Release, Department of Defense, Washington, DC, September 19, 2014, available at [bbp.dau.mil](http://bbp.dau.mil).

<sup>7</sup> Fox, *Defense Acquisition Reform*, p. 174.

### *Writing contracts*

The Department of Defense also has numerous choices in how it can write a contract. It can propose a *fixed price* agreement. With such an approach, a company agrees to deliver a certain number of a given system at a total cost that is not subject to further adjustment by either customer or supplier, at least for a given lot of the total program (which could extend over multiple years, even if congress would need to appropriate funds in annual installments given its procedures). Or the Pentagon can use a *cost plus* contract, asking the contractor to document all costs, then reimbursing for those costs plus some profit margin (say, 12 percent) that is accepted by both parties.

DOD can also use a hybrid model, perhaps using cost-plus terms for the research and development stages (when new technologies are being invented, meaning that costs are less easily foreseen) and then using a fixed-price approach once production begins. It can employ a *fixed price/incentive* concept, which retains the basic logic of the fixed price method but commits the government to share in the financial burden of any cost overruns (so that the firm in question is not rendered bankrupt if a given important technology proves harder to develop or produce than first thought).

### *Handling internal DOD politics and bureaucracy*

Historically, the military services operated essentially as independent fiefdoms and made their own budgetary decisions, at least within the Department of Defense or its predecessor, the War Department. However, particularly from the McNamara years on, the office of the secretary of defense started to play a larger role. Different oversight boards, with varying degrees of uniformed military service involvement, advised secretaries on key acquisition decisions.

Beyond the matter of high-level decisionmaking, considerable evolution has occurred in how programs are overseen by the Pentagon as well. Certain reform periods tried to make program managers better trained and also attempted to leave them in their positions for longer rotations, to improve the Department's working memory as it sought to oversee how contractors built systems the Pentagon was acquiring.

### *Working with private companies*

There are multiple motives involved in how the Department of Defense oversees payments it makes to contractors. On the one hand, it tries to regulate carefully, so that equipment will be suitable for battlefield conditions, and so that the taxpayer is not



fleeced. It also sets up numerous milestones for weapons to be conceptually evaluated, researched, prototyped, built in limited numbers, and then finally built in desired numbers.<sup>8</sup> This approach is intended to ensure that weapons really work. On the other hand, in theory at least, DOD seeks to avoid being overly onerous in how it imposes certification requirements and other overhead and paperwork and red tape on firms. These considerations are especially important for those companies that are either modest in size or relatively new to the defense world and thus unable to navigate all the obstacles themselves.

Much of this issue concerns common sense. Thousands of pages of procurement regulations strewn throughout dozens of federal laws and acquisition guidelines are not user friendly. Hundreds of pages in a central place make more sense, and some reforms have moved in this direction over the years, though existing guidance still totals more than 2,000 pages.<sup>9</sup> While tactical radios may need to be nuclear-hardened, or capable of withstanding jungle or desert conditions for some number of months or years, for example, pop-tarts in MREs probably do not require similar standards (or testing to ensure compliance), to take a somewhat flippant example that illustrates the broader issue at hand.

There may also be times when the immediate demands of national security necessitate a more rapid approach to acquisition—partly for the good of the contractor, but more fundamentally for the good of the country and its troops. A good case in point is the creation of several mechanisms such as “Other Transactional Authority” for circumventing normal bureaucratic procedures during the wars of the 21st century, with the most famous example being the Joint Improvised Explosive Device Defeat Organization (JIEDDO). This allowed for more rapid decisionmaking and thus more rapid acquisition of life-saving technologies designed to counter the effects of roadside bombs and similar dangers.<sup>10</sup>

Another matter relates to intellectual property. If a new technology is developed for the Department of Defense, which then reimburses the contractor for the expense, current expectations are that the intellectual property then is owned by the government. But for many companies, giving away such jewels, especially when the government may have been only one contributor to the development of a given program, works squarely against their business model and their long-term financial viability.

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<sup>8</sup> Fox, *Defense Acquisition Reform*, pp. 26, 95.

<sup>9</sup> *Ibid*, pp. 14, 179.

<sup>10</sup> Ashton B. Carter, “Running the Pentagon Right: How to Get the Troops What They Need,” *Foreign Affairs*, vol. 93, no. 1 (January/February 2014), pp. 101-112.

# KEY IDEAS AND OPTIONS FOR CONGRESS AND THE ADMINISTRATION IN 2015

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The above considerations help us understand several key issues that contemporary policymakers need to wrestle with, as well as the kinds of options available to address them. They include the following:

- Should the Department of Defense curtail the F-35 Joint Strike Fighter program partly in order to diversify its sourcing for fighter aircraft, buying or refurbishing more F-15, F-16, F-18, A-10, and/or unmanned aircraft instead?
- Should the DOD's upcoming decision on contracting for a long-range strike bomber consider the idea of a split buy, again to maintain a diverse industrial base and perhaps even to save money? This option means paying two firms to develop technologies in full, and then to equip new factories, so in fact it could also cost money—the argument used to kill the proposal for a second engine producer for the F-35 in recent years. But with the Littoral Combat Ship, this split-buy approach has been employed in recent years. Another model might be that used for nuclear submarines, with a single main designer but two production yards that share the work of production.
- Can the Department of Defense break down more information technology contracts into smaller chunks, requiring open-system architecture to allow subsequent integration? In other words, can DOD more successfully mimic the commercial world—and can it find a way to pay contractors for such technologies that makes paperwork less onerous and intellectual property right considerations less contentious (not requiring firms to divulge trade secrets when they win contracts)?
- Can other nontraditional suppliers be helped along in the system more easily, be they small businesses or foreign contractors? Again, streamlining of regulation would help; so might one-stop customer-assistance centers (perhaps accessed for a modest fee) that would help in the preparation of relevant paperwork for novices to the DOD behemoth.

- Should the Department of Defense use the “Urgent Operational Need Statement” approach that was employed by JIEDDO to develop and produce mine-resistant ambush-protected (MRAP) vehicles across a wider array of technologies?<sup>1</sup> Another mechanism is the so-called “Other Transactional Authority” model of acquisition. For example, even if it cannot engineer more sweeping acquisition reform, should DOD apply a variant of this concept to IT technologies, where the current approach is out of whack with prevailing commercial practices—and where commercial practices unambiguously are outpacing DOD innovation and modernization efforts? This approach, of course, will not generate new funds for DOD but simply change the way that a given type of project is financed. Still, in some situations, that can be a great benefit.
- Is DOD efficient enough, and fast enough, in its appeals process, by which firms losing a given contract can contest and challenge the decision?

In pursuing any and all of these ideas, expectations for transformational results need to be kept in check. First, the DOD acquisition system is not as broken in all ways as sometimes alleged; at least for major weapons platforms, the U.S. armed forces clearly have the best equipment in the world and get a lot for their money. Second, invention is a difficult, uncertain process and cannot be set to firm timelines or cost schedules. Third, with defense systems more complex than ever and defense spending a smaller fraction of GDP than at any point during the Cold War or any point since the Iraq and Afghanistan campaigns began, it will be harder to maintain diversity and depth in the industrial base even if clever ideas are employed. Some of this is unavoidable.

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<sup>1</sup> Alex Haber, “Should an End to Urgency Mean an End to Effectiveness?” Atlantic Council, Washington, DC, October 27, 2014, available at <http://www.atlanticcouncil.org/blogs/defense-industrialist/should-an-end-to-urgency-mean-an-end-to-effectiveness>.

# RECOMMENDATIONS AND CONCLUSION

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Congressman Mac Thornberry, the new chairman of the House Armed Services Committee, has recently unveiled a set of proposed reforms for the way the Department of Defense buys equipment and contracts for other services. This is a very welcome focus for a new committee chairman at this juncture in history. Combined with the reformist instincts of his fellow chairman, Senator John McCain of the Senate Armed Services Committee, as well as the background of Secretary of Defense Ash Carter and his top team, there is likely to be real progress in the months ahead. But to complement all these efforts, we also need a broader policy debate that engages Washington beyond just the defense community and that focuses more on the big picture. The changes being discussed now generally look good but trend towards the more modest side of the possible and desirable reform agenda, such as streamlined paperwork requirements and continued education of the 150,000-strong DOD acquisition workforce (which perhaps can be scaled back modestly in size, as some of the below steps could encourage and facilitate). We should go further:

- Use Federal Acquisition Regulations Title 12 more often, rather than falling back on Federal Acquisition Regulations Title 15. In theory, the Pentagon is supposed to buy commercial goods, as under the so-called FAR 12 code, whenever possible, and avoid the complex and cumbersome FAR 15 rules that involve negotiated contracts. In these FAR 12 cases, the Pentagon can in theory behave like a normal customer and avoid the complex steps and onerous paperwork involved in a major weapons procurement process. But the tendency is still to define requirements in such a way that there are enough military-unique characteristics for whatever radio or phone or jeep or computer is at issue that the FAR 15 code is used almost by default.
- Streamline oversight when the Pentagon can rely on competition to discipline firms about price. Today, for example, the Defense Contracts Management Agency has an on-site presence in many factories; its personnel literally tabulate what it thinks weapons should cost based on all sorts of details about the production process. This may make sense for complex weapons being built by just one supplier. But for cases in which there is a commercial equivalent or two producers, the competitive process can provide the discipline—just as it does in

the commercial market—and oversight can be scaled back enormously. DOD can base its future-years purchases of a given weapon in part on which of two companies may be providing a better buy at present.

- Follow the JIEDDO model for other technologies. When so many Americans were being hurt or killed by improvised explosive devices in Iraq and Afghanistan, the congress allowed the Department of Defense to create special, expedited acquisition procedures and ultimately the Joint Improvised Explosive Device Defeat Organization to research and produce relevant technologies quickly. Deputy Secretary of Defense Paul Wolfowitz and others championed the effort, to great effect. This concept could be used, especially for lower-risk technologies that nonetheless are important to build quickly.
- Break down information technology purchases into smaller batches. There are times when creating a huge common computer infrastructure with the same machines or software across hundreds of thousands of users may make sense. There are other cases where this big approach puts too many eggs in one basket. By using open-source and modularity concepts, making sure different systems can talk to each other but allowing more discrete and smaller buys by various agencies, the Department of Defense may do better.
- For technologies that have commercial analogues but certain military-specific attributes up to a certain percentage of value, allow firms to keep their intellectual property rights rather than sharing all relevant data with the government. In such cases, the government cannot really claim to have generated the relevant expertise and information, so it makes more sense to keep it proprietary. This principle could apply from aircraft engines to smart phones to space boosters. It could help convince many companies wary of doing business with the Pentagon to reassess. However, it should not be employed in cases where a specialized defense system is developed by a given company at considerable taxpayer expense, especially in cases where DOD may wish to contract for upgrades or modifications subsequently—because in such cases, competition could be thwarted by such retention of intellectual property rights.

Defense acquisition reform has been a major preoccupation of planners for more than half a century—and will likely remain that way for at least as long into the future—given the complex nature of the defense research, development, and procurement enterprise. But even gradual, incremental progress is worth striving for—and it is also of

considerable value to the taxpayer, the armed forces, and the nation. And in some areas such as IT acquisition, where the technologies are newer and change faster, the opportunities may be particularly ripe for exploitation if DOD can truly learn to do business better. The system is not broken. But to truly deserve a grade of B+ or A-, it can and must still do much better.



# ABOUT THE AUTHOR

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