# DUAL USE

## *Can It Work?*

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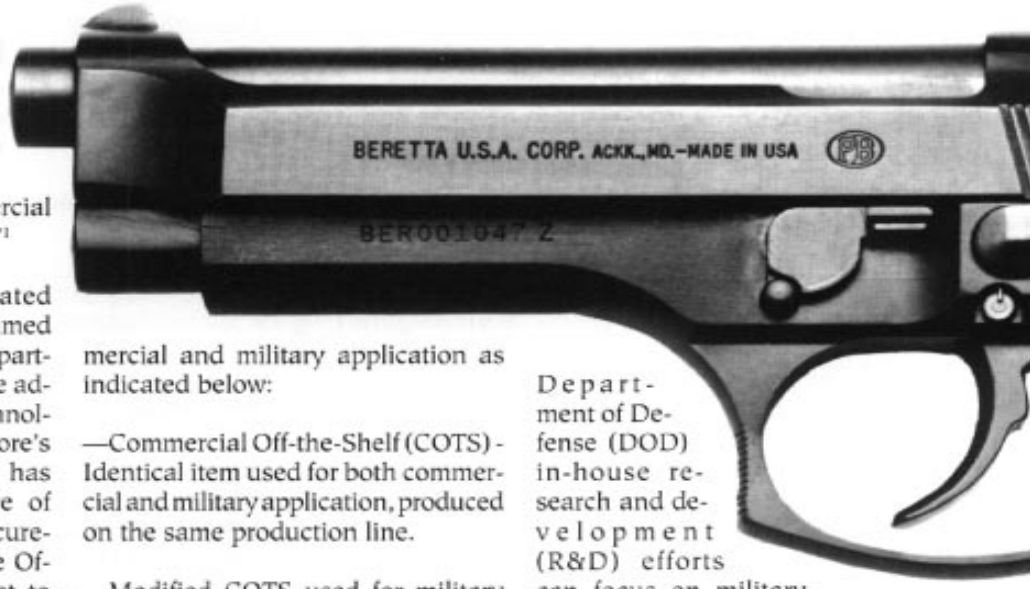


"A restructured Defense Department will focus...on creating a streamlined, efficient acquisition process...working to integrate more closely defense and commercial technology and manufacturing."[1]

President Clinton promulgated these words shortly after he assumed office. He elaborated, "In the Department of Defense, we will propose additional funding for dual-use technology programs[2]....Vice President Gore's National Performance Review has specifically stated an objective of ...systematic reform of the procurement process[3]....We will ask the Office of Management and Budget to draft a new federal commercial code with commercial-style procedures, and then ask Congress to adopt the new code and remove impediments to this money-saving approach to procurement. The government can save enormous amounts of money by buying more commercial products instead of requiring products to be designed to government-unique specifications."[4]

The intentions of our Commander in Chief are clear. The next step is to implement these intentions.

### What Is Dual Use?

Dual use implies products or families of products that have both commercial and military application as indicated below:

—Commercial Off-the-Shelf (COTS) - Identical item used for both commercial and military application, produced on the same production line.

—Modified COTS used for military application and produced on the same production line as the commercial item.

—Different end items for military and commercial applications that use the same pieceparts, modules and/or subsystem components, ideally produced on the same production line.

The essence of the definition is that all or part of a military system can be researched, developed, produced, and/or operated and maintained in common with a commercial system.

The dual-use nirvana involves weapon and component designs that incorporate commercial products and processes; military and civilian products manufactured side by side; and private firms heavily involved in providing depot-level maintenance and upgrades for deployed forces. The Department of Defense (DOD) in-house research and development (R&D) efforts can focus on military-unique technologies, while assimilating new civilian R&D to meet defense needs.[5]

### Current Extent of Dual Use

Dual use is the exception rather than the rule for the following:

—Laws on defense acquisition have impeded civil-military integration and forced firms to isolate their defense work from their civilian work.[6]

—Not all military products (e.g., nuclear submarines, tanks, sonobuoys) and technologies (e.g., nuclear weapons, stealth aircraft) have a commercial application. Thus, dual use has limited applicability.

—Military acquisition practices (military specifications and standards, military accounting practices, military performance trade-off mindset,

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etc.) are incompatible with commercial practices, resulting in few success stories. As a result, contractor relationships with the government are totally different now from the relationships that exist between these same contractors and their commercial customers.[7]

—Timing: According to Jaques Gansler, acquisition systems produced under DOD Directive 5000.1 typically take 16.5 years from initial idea to fielded system. Commercial systems can proceed from design through development and marketing to obsolescence in less than five years — particularly consumer items or high-technology items.[8]

Photo courtesy of Beretta

—Service Life: Military systems have service lives far in excess of commercial systems. An example is the Lockheed Electra Airframe — a 1950s commercial airliner — and its military derivative — the P-3 Orion Aircraft. No major U.S. airline is still using this turboprop aircraft, yet the U.S. Navy will continue to use this airframe into the next century.

**Potential Benefits of Dual Use**

Dual use has potential benefits. Some are:

—*Lower Cost*. Dual-use items cost considerably less than military-only items due to greater competition and higher-volume commercial production efficiencies.

—*Increased Capacity and Responsiveness*. The industrial base devoted exclusively to defense is slowly, clearly and progressively deteriorating as market forces take their toll. A dual-use industrial base will be stronger and more responsive (in time of war) to surge demands.

—*Shortened Time*. Commercial items transition from initial idea to fielded system in less time than military items. Dual-use items should achieve this same result in less time than it takes for an exclusively military item.

—*Potential for Innovation*. Military business no longer drives technology as in the past. Defense-relevant technologies are developed increasingly in the civil sector and by other countries. Dual use will prove a better method of incorporating commercial technology into defense items.

—*U.S. Competitiveness*. Dual use should strengthen U.S. competitiveness in the world economy by increasing our economies of scale. A dual-use industrial base is stronger, since it is maintained by both the DOD and the national economy as a whole.

**Potential Drawbacks of Dual Use**

The following are areas in which dual use can have drawbacks:

—*Performance*. Under dual use, a military requirement can no longer drive all aspects of the design, which will not be optimized solely for the military application. Trade-offs between military and commercial application will have to be made.

—*Incompatible Service Lives*. Commercial service lives may have ended, while military service lives may be two or three times as long. This will result in costs and problems if a manufacturer wishes to cease production of technologically obsolescent (but still useful) end items or spare parts, or upgrade the commercial item (in which the military may not be interested).

—*Increased Vulnerability*. Dual use eliminates the distinction between civilian and military targets, since the same target (production plant, logistics depot, R&D laboratory, etc.) performs both civilian and military functions. Enemy destruction of a single (dual-use) target eliminates military and civilian potential. Hence, our national vulnerability is greater under a highly successful dual-use program vis-a-vis separate military and civilian facilities.

—*Political Cost*. The political cost and acceptability of destroying an enemy's dual-use facilities (e.g., a "baby milk factory" that also produces military rations) may be significant.

**The Beretta 92: Example of Dual Use**

The Beretta 92 family of pistols is a highly successful example of dual use. The adoption of the Beretta 92F as the standard military 9mm handgun resulted in this Italian firm enlarging its

production facility in Accokeek, Md., (employing local residents) to produce military and civilian versions of the pistol on the same production line. In addition to production efficiencies, design (the military design was based on an earlier civilian design called Model 92) and logistics efficiencies (identical ammunition, parts and manuals can be used in both civilian and military versions) were achieved. Prices are as follows:

Military Beretta 92F—approx. $200 ea.
Police Force Beretta 92F—approx. $400 ea.
Civilian Beretta 92F—approx. $630 ea.[9]

The Beretta 92 is used widely throughout the world, is carried by many police officers across America, and is a first-rate handgun.[10]

The Office of Technology Assessment (OTA) analysis has concluded that choosing dual-use technologies, private ownership, and competitive acquisition is preferable to alternate paths.[11] When coupled with the goals of the President and Vice President, dual use is a major acquisition innovation of the future.

*Although the Lockheed Electra Airframe — a 1950s commercial airliner — is no longer used by any major U.S. airliner, the U.S. Navy will use this turboprop aircraft as the P-3 Orion into the next century.*

**To Make It Work**

To make dual use work, the following are needed:

—Authorizing government officials to suspend application of socioeconomic laws, trade restrictions, executive orders, and special certification/recordkeeping requirements that mean a commercial company must alter fundamentally the way it conducts business if it desires to sell to DOD.[12] The OTA reports that the entire DOD regulatory regime adds 10-50 percent to the cost of doing business with the government, an amount equal to tens of billions of dollars annually.[13]

—Implementation of the specific initiatives proposed by the DOD Advisory Panel on Streamlining and Codifying Acquisition Law (Section 800 Panel) to eliminate numerous statutory requirements that prevent DOD from acting more like a commercial buyer and achieving greater harmony with commercial practices and standards.[14]

—Significant changes in basic engineering education at the undergraduate, graduate and continuing education levels. Rather than training people to participate in radical technological breakthrough, people must be trained for the incremental improvement that constitutes the bulk of commercial innovative activity and reverse the erosion in engineering departments exposing students to design, manufacturing and product support (vice upstream activities removed from commercial production and product support).[15]

—The climate in which design choices are made differs greatly between defense and commercial sectors... the know-how acquired in military projects is a poor guide for making design choices in commercial projects.[16] Hence, specifically training government acquisition personnel and users to change mind-set by seeking harmonization of commercial and military requirements (aka - more modest performance) in return for lower costs will be necessary.

—Demands for cost and pricing data (that has encouraged companies to maintain separate facilities and accounting systems for commercial and military production[17]) must be made commensurate with other commercial customer requests. Many companies prefer to forego government sales rather than disclose the required information or deal with the paperwork. According to the Semiconductor Industry Association, five of the ten top U.S. semiconductor companies will not accept DOD business if the contract requires certified cost or pricing data.[18] The acquisition community needs to concentrate on obtaining best value vice regulating contractor costs and prices.

—Annual purchases of high-volume consumer goods can run into millions of items, while military purchases are done in relatively small lots. Hence, an incentive for industry to partici-

Photo courtesy of Lockheed

pate, such as ensurance of a stable, long-term business relationship, may be necessary in some cases.

—Technical data rights and intellectual property rights are another area where change is necessary if dual use is to succeed. Customarily, the government attempts to obtain unlimited data rights in order to preserve the option to recompete items downstream. As can be expected, this practice increases the reluctance of DOD contractors to invest in continuous improvement of a product that may be procured from another source next year.

—Congressionally-generated laws, regulations, oversight, and micromanagement must be reformed.

**Likely Scenario**

In late 1993, Congress balked at the Clinton acquisition reform package.[19] According to a senior government official, this package included those modest reforms that were thought to be easiest and most obvious to implement. Hence, the Pentagon's much-anticipated acquisition process reform plan will not be delivered to Congress until at least 1994.[20] The resultant status quo is one in which Congress calls for greater efficiency in DOD acquisition (Why can't you do it like industry does?) while legislating inefficiencies through laws that mandate every defense dollar must do double duty — provide for the common defense and promote the general welfare.

Based on past history, the most likely scenario for implementing dual use in the short run appears to be as follows:

—Nearly 900 different procurement laws and more than 4,500 pages of regulations will continue to hamper efforts of the acquisition workforce. The Section 800 Panel reforms will be addressed slowly, if at all.

—Hampered by congressional inaction, only modest revision to the approximately 1,000 pages in the current DOD 5000.1 series of acquisition regulations will be undertaken and require at least two years to promulgate (note, more than one year has passed already). Strong words exhorting the desirability of dual use will appear in the introductory pages of the revised DODD 5000.1; however, the body of the document will be largely business as usual. This will impede significantly practical implementation of dual use in the massive DOD downsizing.

—The DOD leadership will address the problem of education and training by tasking the Defense Systems Management College (or a Defense Acquisition University equivalent) to reinstitute quickly the one-week Acquisition and Distribution of Commercial Products Course (the original course was canceled in the early 1980s after less than one year of operation due to the lack of interest). The urgency of the tasking will require course development before major changes to DODD 5000.1 are completed or promulgated, leaving educators to "guess" on emerging major policy. In the first year of frenzied operation, 500 students will graduate from the new course. The DOD will declare the acquisition workforce "educated" and expect it to perform.

—Commercial industry (capable of dual use) will react like five of the ten top U.S. semiconductor companies and generally not accept overregulated DOD business. The defense industry, however, understandably will jump at the business opportunity, and promise whatever is necessary to survive or avoid bankruptcy. To date, history shows failure in commercial diversification efforts by defense firms.[21] When results fall short of expectations, litigation can be expected to drag on for years.

—Subsequently, DOD political appointees (in a rush to show great accomplishments before the 1996 elections) will declare success.

—The national press will not find the degree of success claimed upon examination of specific cases, report on the early litigation, and editorialize

on the incompetence of DOD and the moral ineptitude of defense industry.

—Americans, reacting to overwhelming press reports, will renew their skepticism and lack of trust in their government and industry.

—The Congress will address this perception problem with another round of additional nonvalue added laws, regulations, oversight, and micromanagement aimed at solving the perception crisis, but failing to address its root causes. The 1,600 pages of the Federal Acquisition Regulation (FAR) and the 2,900 pages of agency-specific supplements will grow. The Congress, in a binge of reelection exhortations, will attempt to blame the acquisition workforce for the entire problem.

Hence, the most likely short-run scenario is for dual use to fail. When this failure is recognized generally, two alternate scenarios are likely in the long run.

The first alternative is for a variation of the whole process to repeat itself. True progress will be impossible in a situation where symptoms are treated while the underlying problem is neither recognized nor addressed.

The second alternative is for enlightened leadership to recognize the importance of dual use to the future of a country with reduced defense expenditures. This leadership will address the real problems and do what it takes (including the politically incorrect and unpopular) to commence the successful implementation process for dual use. This alternative likely will require the next generation of leadership, and can be expected to take from 10-20 years.

**Conclusion**

The next decade will not be business as usual in defense. We face the most unprecedented challenge in a generation. Politically incorrect, radical changes in defense acquisition will be necessary to cope efficiently and effectively with the challenge of the most radical downsizing of U.S. armed forces since World War II ended. Innovation, by its very nature, requires deviation.[22]

—Politicians will have to be politically incorrect.

—Skeptical contractors will have to be willing to try again.

—Bureaucrats will have to be nonbureaucratic.

—A biased press will have to become unbiased.

—An untrusting public will have to become trusting.

In other words, the leaders of each of the major players will have to reserve their behavior to make dual use work! Can a leopard change its spots? Will our leaders step up to the challenge? Recent history and the first congressional reaction to acquisition reform proposals indicate they won't — at least in the short run.

Perhaps Rep. J.J. "Jake" Pickle, D-Texas, has summed up the immediate future best: "Before long, the reforms will be strangled in their infancy by the very same special interests and entrenched bureaucracies that brought us this mess in the first place."[23]

**Endnotes**


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5. U.S. Congress, Office of Technology Assessment, "Building Future Security," OTA-ISC-530 (Washington, DC: U.S. Government Printing Office, June 1992), p. 23.
6. *Ibid*, p. 7.
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17. *Streamling Defense Acquisition Laws - Executive Summary: Report of the DOD Acquisition Law Advisory Panel*, March 1993, DSMC Press, p. 9.
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