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Murray L. Weidenbaum

Washington University in St Louis

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Weidenbaum Center on the Economy, Government, and Public Policy – Washington University in St. Louis
Campus Box 1027, St. Louis, MO 63130.



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Murray Weidenbaum

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Contact: Robert Batterson
Communications Director
(314) 935-5676

The U.S. Defense Industry After the Cold War

by Murray Weidenbaum

The U.S. defense industry is adjusting to the end of the Cold War far more rapidly and far more effectively than was generally expected. Many of the changes to date have been painful and the end of the adjustment process is not yet in sight. Nevertheless, today's national security decision makers can count on the presence of a strong defense industrial base. But that positive situation cannot be taken for granted in the years ahead. I would like to offer one economist's evaluation of the future challenges facing the U.S. military establishment and the private-sector companies on which it relies so strongly.

To judge the adequacy of the future defense industrial base in an uncertain post-Cold War environment is a challenge indeed. It requires us to deal simultaneously with a set of paradoxes — to develop an international orientation at a time when the nation is focused on domestic concerns, to consider expanding military outlays in a period of budgetary austerity, and to worry about the adequacy of competition for the production of weapon systems when the economy is adjusting to a wave of mergers, consolidations, and downsizing.

This is a tall order, so let us begin with fundamentals. As an ex-defense industry planner, I instinctively start with an examination of the major threats to our national security. To state the obvious — although it may not be so clear to all our fellow citizens — the United States continues to exist in a dangerous world.

The Changing Threats to National Security

The key danger to our security is no longer a large array of Soviet strategic systems presumably aimed at this nation. Those missiles and bombers may not now be aimed at us, but

Murray Weidenbaum is Mallinckrodt Distinguished University Professor and chairman of the Center for the Study of American Business at Washington University in St. Louis. He is the author of *Small Wars, Big Defense* (Oxford University Press, 1992). This paper was prepared as an address to the Conference on the Military Industrial Base, delivered at the U.S. Air Force Academy, Colorado Springs, Colorado, on April 17, 1997. The views expressed are those of the author.

— and a fundamental “but” — the uncertain control over the technological resources developed by the Soviets is far from comforting. Developing countries in Asia have been acquiring a wide variety of high-tech equipment from the spin-off nations of the former Soviet Union — including SU-27 attack aircraft, MIG-31 fighters, T-72 tanks, and MI-17 helicopters. More fundamentally, China is emerging — once again — as a great power, both economically and militarily. Credible reports indicate that China is buying two or more Sovremenny-class missile destroyers from Russia; that ship’s main armament is the SS-N-22 supersonic antiship missile.

Simultaneously, large and indeterminate assortments of terrorists and other troublemakers are developing the capability to do considerable harm to the people of this country and to our friends and allies. We have to be concerned when we read reports such as the following:

- At several naval bases around Vladivostok, about 24 highly radioactive reactor cores cut out of dismantled nuclear submarines are either floating in bays or sitting in unsafe ground storage. Guards at the Vladivostok bases frequently go several months between paychecks. Thousands of Chinese traders and entrepreneurs have been drawn to the city. According to one Russian investigator of the loss of nuclear fuel, “Potatoes were guarded better than naval fuel.”
- Biological weapons, which are far easier to manufacture, transport, and disseminate than any other type of weapon of mass destruction, are of growing importance in the post-Soviet environment. Anthrax, for example, can be made by a biology student in a lab the size of a microbrewery. A small suitcase can contain enough to kill hundreds of thousands of people. As for the delivery platform, anthrax can be readily sprayed from a crop duster.
- Between 1991 and 1996, about 5,000 employees left the Ukrainian Southern Machine Building Plant. That facility specializes in developing and producing SS-18 missiles. During the same period, the All Russian Scientific Research Institute of Experimental Physics, which specializes in nuclear warhead R&D, lost about 5,000 people. All in all, the numbers of unemployed scientists and engineers in Russia and other parts of the former Soviet Union are at a record high.
- Libyan and Iranian “university representatives” are stepping up efforts to recruit various categories of scientists.

All of this reminds me of the lament of a speaker at a recent conference on national

security, "Peace is hell."

Surely, today's situation requires developing a very different response from that which was appropriate during the Cold War — in terms of intelligence and communication; planning and strategy; research, development, and production capability; and force structure. But that does not necessarily mean a drastically lesser response. The United States needs the capability to participate in a new spectrum of conflict, which may include low-intensity and urban warfare and serious situations of global crime and lawlessness, in addition to conventional confrontations between major national powers.

Viewed in this light, the current practice of cutting back the equipment and personnel required during the Cold War is surely not the end of the process of adjusting to a new environment. Rather, it is the beginning. Of course, at a time of tight budgeting, it is foolish to devote the limited funding to activities supported more by sentiment for the past rather than the needs of the future. Military pork was never fully justified, but the "opportunity cost" of such indulgences is much higher than ever.

Maintaining an Adequate Industrial Base

Thus, we must turn to the key task of how to maintain the capability of designing and producing the military systems and forces that will be needed to deal with future threats. Viewed in this light, the concern with the defense industrial base is far more than a matter of contract forms, cost controls, and business procedures. Fundamentally, we are dealing with the continued ability to possess an appropriate and adequate arsenal of military power in a dangerous world. To restate the challenge facing this conference: how will the United States maintain the defense industry's innovative, managerial, and technological strength so vital to the national security at a time of profound downsizing?

We are facing levels of funding for military R&D and procurement that, in real terms, are much less than one-half of the 1985 numbers. As we will see, the comparisons in terms of reduced shares of gross domestic product (GDP) and federal budgets are even more striking and numbers alone do not convey the intensity of the problem.

Compounding the loss of much of the traditional military market has been the challenge of fending off the pressures to “convert” defense industry resources to civilian markets. This “second front” was opened in the mistaken belief that Congress will only approve substantial reductions in the military budget so long as defense industry jobs are maintained, albeit for civilian work. This is not a blanket criticism of diversification. After all, when I left Boeing in the 1960s, it was primarily a military contractor, with an important but much smaller commercial aircraft division. Today, Boeing is the premier producer of civilian aircraft, with a strong but much smaller defense sector. However, that fundamental change occurred voluntarily and in response to clear market opportunities.

The more recent conversion pressures that were, in the main, successfully resisted, would have involved large government subsidies and new controls. All this would have been aimed at forcing management attention to shift to civilian nonaircraft markets, which most of these companies have flubbed time and again. Such dissipation of their limited resources would have left these companies in weak financial shape. It also would have threatened the technological strength of the defense industrial base.

Fortunately, the major defense companies followed a very different and more sensible set of approaches, each of which reflected tough-minded and realistic management decisions. The result has been a financially stable set of prime contractors, some quite strong in terms of their profit structures. This has been true for most traditional defense contractors, except for producers of conventional ammunition. With the likelihood of a reduced number of major prime contracts to be awarded in the years ahead, many of the historic primes merged with or acquired some of their traditional rivals. Marriage partners included Lockheed and Martin (who then merged with Loral), Northrop and Grumman, and, subject to antitrust review, Boeing and McDonnell Douglas.

These and other important defense contractors eliminated large divisions that were viable but not industry leaders. General Dynamics sold its space systems to Martin and its tactical aircraft business to Lockheed. General Motors’ Hughes subsidiary is selling its defense electronics activity to Raytheon, which has acquired Texas Instruments’ defense unit. Ford’s Aero-

space, IBM's Federal Systems Division, and Unisys' defense systems operations all went to Loral (on its way to Lockheed Martin). Northrop Grumman acquired Vought Aircraft and the defense work of Westinghouse — and the trend continues.

Since 1993, approximately \$70 billion in mergers and acquisitions have occurred among the major defense-oriented companies. During this restructuring, the aerospace industry work force declined 39 percent, from a peak of 1.33 million in 1989 to 806,000 in 1996. Coincidentally, the Department of Defense estimates a 39 percent decrease in total defense-related employment between 1989 and 1997 — or about 5 percent a year.

Not surprisingly, some serious critics — including the Defense Science Board — bemoan the prospect of declining competition for military contracts, accompanied by higher prices and poorer products. In their view, those adverse results could flow from a reduced number of competitors. As a general proposition, of course, competition is good, so more is better than less. However, that traditional approach to the antitrust laws is now passé. After all, in the past two decades, the antitrust authorities allowed a host of mergers between active competitors in civilian markets. In the 1960s and 1970s, comparable corporate marriages likely would have been challenged if not stopped.

Since 1980, many large banks, retail chains, communications companies, and manufacturers have merged quite successfully. The civilian economy is much healthier for that consolidation. We have not witnessed the bursts of price increases that would, at one time, have been expected to accompany the declines of measured competition. Rather, American consumers are enjoying the most benign inflation situation in many years — and with high and rising levels of employment.

The new approach to antitrust enforcement is not one of laxity. It reflects, instead, the changing nature of the marketplace, especially the globalization of business and the rise of cross-border competition. The case of the military marketplace is somewhat similar but not identical. (I am ignoring the possibility of resorting to the national security exemption which some legal authorities would apply to antitrust matters.) Perhaps the most strikingly unique characteristic of defense procurement is that, even after the current merger wave, production

capability will likely exceed by far the procurement of defense products.

I shudder to think of the consequences if the conventional antitrust approach had been applied to the recent wave of defense industry mergers and acquisitions. The result would have been a larger number of financially weak firms. Most of them would lack the critical mass required to maintain high levels of research and development. The losers would not have been restricted to shareholders. Rather, the national security would have suffered the erosion of the quantity and likely the quality of defense technology.

The reality that policymakers are acknowledging is that in the foreseeable future the Department of Defense will be ordering fewer weapon systems from a smaller group of companies than it was accustomed to during the Cold War era. We may well see a shift in formal emphasis from price competition back to design competition. But, in reality, I sense that technological superiority has continued to be the key factor all along. This gut feeling is supported by GAO estimates showing that “full and open competition” accounts for very small percentages of weapon system procurement (27 percent in the case of aircraft during 1986 to 1994 and 28 percent in the case of missiles). Most important, the competition for the award of contracts for new weapon systems remains intense.

One important change in defense contracting procedures would be helpful. Because major production contracts are likely to be few and far between, the rates of return on research and development should be raised substantially. Military R&D no longer can be viewed as a loss leader. Contractors must be given a greater incentive to devote their resources to R&D even in the absence of winning large production orders.

Overall, the defense industry is in far better shape than might have been expected from the loss of so much of its basic market. The results are very positive when we examine the financial statements of the six major primes — Lockheed Martin, United Technologies, McDonnell Douglas, Northrop Grumman, Boeing, and General Dynamics. In 1996, their combined military and civilian sales came to \$98.6 billion, generating \$4.5 billion in aggregate profits. The stock market valued these six companies at an impressive \$95.7 billion (see Table 1).

In light of these good numbers, it is not surprising that, in spite of the massive cutbacks in

Table 1
Financial Condition of Key Prime Contractors in 1996

COMPANY	SALES		PROFITS		MARKET VALUE (in billions)
	(in billions)	Yearly Change	(in billions)	Yearly Change	
Lockheed Martin	\$26.9	18 %	\$1.3	98 %	\$17.8
United Technologies	23.5	3	0.9	21	18.1
McDonnell Douglas	13.8	-3	0.8	—	14.4
Northrop Grumman	8.1	18	0.2	-7	4.3
Boeing	22.7	16	1.1	179	36.7
General Dynamics	3.6	17	0.2	9	4.4
Total	\$98.6		\$4.5		\$95.7

Source: Company annual reports.

U.S. defense spending, no plea has been heard for taxpayer bailouts of faltering defense contractors. Then-Secretary of Defense William Perry's admonition was good policy but too pessimistic a forecast: "We expect companies to go out of business, and we will stand by and let that happen." No Chrysler-style corporate loan guarantee program was necessary — or even requested — much less the 1930s-type of U.S. Reconstruction Finance Corporation to help ailing companies. It reminds me of the famous Sherlock Holmes story where the key clue was that the dog did not bark. Similarly, the most important point in military-industry relationships in the post-Cold War period has been the absence of crisis.

On the positive side, we should acknowledge the streamlining of much of the byzantine procurement process and the resultant reduction of overhead costs on the part of both buyers and sellers. The Federal Acquisition Streamlining Act of 1994 was far from a panacea, but it has been a constructive force. Also helpful have been efforts to eliminate some military standards and to move to using more commercial practices.

A more controversial aspect has been allowing merging firms to bill some of the costs of

reorganization as overhead on existing defense contracts. Such costs include severance pay for terminated employees, early retirement incentives, and relocation expenses. The critics refer to this procedure as “payoffs for layoffs.” However, the savings to the government from the resulting efficiencies are reported to offset by far the magnitude of the allowable costs.

Perhaps this carrot could in some way be used to encourage closing down more of the unneeded production lines than has been the case to date. A number of defense contractors, such as McDonnell Douglas, have eliminated some excess production facilities. But these closures have not been universal. According to recent reports, Northrop-Grumman still has all nine plants producing aerostructures. Lockheed Martin still maintains its three original aircraft lines in California, Texas, and Georgia. Some defense analysts have urged the federal government to “buy out” the industry’s excess capacity. Why not instead tie the generous treatment of allowable costs to “biting that bullet”?

Overall, defense factories are reputed to be operating at about 60 percent of capacity — compared to 83 percent for industry generally. Rather than continuing to bear the expense of maintaining all of the elderly production facilities of the Cold War, it might make more sense to set aside those funds in case the need arises for building new facilities in the decades ahead.

Guidelines for the Future

What about the future? The federal budget for fiscal 1998 envisions further cutbacks in the real level of defense spending. Frankly, I do not know whether that amount is too high or too low. The interaction between the needs estimated by defense planners and the economizing efforts of budget officials is inherently a bargaining process involving a series of iterations. As a sometime participant in that process, I know how difficult it is. But the need for sound budgeting of defense hardly is a transient phenomenon. It was noted over a century ago by C.F. Bastable in his classic work on public finance: “To maintain a due balance between the excessive demands of . . . military officials, and the undue reductions . . . sought by the advocates of economy, is one of the difficult tasks of the statesman.”

We must admit that, to most citizens, \$250 billion of proposed new budget authority for

the Department of Defense for the fiscal year 1998 sounds like a lot of money, and it is. Nevertheless, I feel uncomfortable with a 3 percent decrease in real terms from the 1997 level approved by Congress. This also means continuing the negative trend in finance that began in 1986 and which now is the largest continuing decline in military finance since the end of World War II. The defense share of GDP declined from 7.5 percent in 1971 to 3.3 percent in 1996, while the military share of the budget dropped from 38 percent to 16 percent during the same time period. Meanwhile, the budgetary allocations to social security, medicare, and other "entitlements" have continued to soar. They now dominate federal spending. And there are no signs of reversing that upward trend in civilian budgets. If anything, it is likely to accelerate in the decades ahead. Thus, the downward pressures on military budgets cannot be expected to abate.

The overall fiscal outlook for the United States is not very satisfying to any serious analyst of governmental finances. The bipartisan forecasts of balancing the federal budget by the year 2002 are more comforting than is justified by the underlying reality. I am not referring to the obvious point that the latest federal budget projects the deficit rising for the next year or two. We can even gloss over the unfortunate fact that the dull knife wielded by the White House and the Congress means that the major cuts in civilian spending will be postponed to the early part of the next century. That is the good news, relatively. The truly bad news is that, even assuming that the federal budget really will be in balance by 2002, huge deficits will face the American people in the years that follow.

Dealing with the built-in future increases in entitlement outlays as the U.S. population ages is the heart of the future fiscal challenge. Except for military retirement pay, however, these are issues that we cannot deal with here. In this light, austerity would seem to be the order of the day for defense planners. Soft and marginal areas of spending must be eliminated — no matter the political cost — if any new expansions in military capabilities are to be seriously considered. Given the uncertainly and surely the changing nature of the threats to our national security, that shift in military priorities from the old to the new is essential. Inevitably, those budget cuts will hit the personnel and operations and maintenance accounts hardest. Nevertheless, production,

construction, and even research, development, training, and education cannot be totally immune from the budgetary scalpel.

In these difficult circumstances, there is something useful that economists can offer defense planners and decision makers. So here are some thoughts that may be helpful in responding to the critics, if not now then surely in the future. The weight of economic analysis strongly supports the view that — within the relevant range of debate — this nation can afford whatever level of military outlays it believes necessary. This is a by-product of work some years ago on the economics of arms control and disarmament. The pertinent question is not the ability of the economy to produce defense goods and services. Rather, the key limitation is the willingness of society to devote a substantial share of its resources to the purpose of protecting the national security.

Virtually every analysis of the burden of defense spending has concluded that, if necessary, the American economy can handle a much higher level of such spending than it now does. But there is a flip side to all this. The same studies show that the growth and prosperity of the United States do not require even the current level of national security spending. The past decade has demonstrated quite clearly that, given a relatively short period of adjustment, the American economy can attain reasonable prosperity with a greatly reduced defense establishment. In fact, the overall growth rate could be enhanced if a large share of the resources previously devoted to defense were shifted to capital formation. By capital formation, I mean civilian research and development, new private-sector production facilities and equipment, and education and training.

There surely is no continuing “correct” share of gross domestic product that should be allocated to defense. The ratio that exists at any time is the accidental result of the federal government’s response to a variety of pressures and factors. Because one number can always be divided into another does not necessarily indicate that any functional relationship is present between the two.

Moreover, higher levels of defense spending may not necessarily equal expansion in military strength. Some spending literally goes down the drain. I am not referring to the silly

cases of the \$600 toilet seats. They were exercises in cheap politics rather than examples of costly procurement. After all, how much less does a commercial airline pay for a similar piece of equipment? No, they do not use the toilet seats that you can buy at the local hardware store. Rather, I have in mind the many military projects that are terminated after many millions or even billions are spent on them without significant numbers of operational units to show for the effort.

In any event, dollars matter because they are the most effective, albeit imperfect, way of representing national resources. Within an inevitably limited military budget, achieving a more effective utilization of resources is not a classroom exercise. It means striving to achieve a higher level of national security within a greatly contained budget. Quantitative economic and fiscal measures can help in that difficult undertaking. But economists will not win friends among the proponents of the programs that are rejected or curtailed during that process.

It is fitting to give Adam Smith the last word. I have in mind the passage in the *Wealth of Nations* on the expense of defense, in which the patron saint of the economics profession declares that such outlay "grows gradually more and more expensive, as the society advances in civilization."

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