

The Sustainability of Current Defense Plans

Written Statement of

Stephen Daggett

Specialist in Defense Policy and Budgets

Congressional Research Service

before the

Committee on the Budget

U.S. House of Representatives

February 4, 2009

Mr. Chairman, Members of the Committee, thank you very much for inviting me to testify this morning on the sustainability of current defense plans. This is an issue that appears to be rising very rapidly toward the top of the defense policy agenda, even at a time when the agenda is very crowded. Certainly, when you listen to the senior leaders of the military services, you are hearing a great deal of concern about the potential for a more or less severe mismatch, beginning now and extending as far ahead as you care to look, between, on the one hand, the cost of currently planned defense programs and, on the other hand, what most see as the likely trend in the defense budget.

Admiral Mullen, the Chairman of the Joint Chiefs, has urged repeatedly that the defense budget should stay at a floor of about 4% of GDP, which, is about the current level of defense spending with war-related supplementals included.¹ Department of Defense outlays in FY2008, including war costs, were \$595 billion, which was 4.2% of GDP. Outlays for the overall national defense budget function were about 4.4% of GDP. If you apply the 4% target just to the Department of Defense base budget, not including war costs, which is what Admiral Mullen appeared to endorse in earlier statements, it would entail an increase of about \$100 billion in FY2010 compared to last year's projection, and of even larger amounts in future years.

For their part, each of the military services has echoed Admiral Mullen's plea for more money. The former Secretary and Chief of Staff of the Air Force, for example, argued for the past couple of budget cycles that the Air Force alone needed \$20 billion more per year for weapons acquisition.² To put that into perspective, in last year's six-year defense plan, acquisition funding – that is, procurement plus R&D -- in the Air Force base budget was scheduled to grow from \$63 billion in FY2009 to \$70 billion in FY2013. So the senior leaders of the Air Force appeared to be saying, in effect, that their budget was 30% short of the amount they thought necessary for equipment.

The Army reportedly is now projecting ongoing budget requirements of \$170 to \$180 billion a year, which is \$30 to \$40 billion per year higher than currently projected base funding.³ The Navy has not been so explicit, but last year increased substantially its estimates of the cost of its 30 year shipbuilding plan, and it has warned of a substantial shortfall in fighter aircraft inventories as well.

If you look at defense industry projections you'll get the same message, as you will if you survey the spectrum of views among the various Washington defense think tanks – most of them using CBO's numbers, by the way – though prescriptions for what to do about it vary.

¹ Most recently Admiral Mullen reiterated his views in a Pentagon press briefing on November 17, 2008 – see Department of Defense News Transcript, “Department of Defense News Briefing with Admiral Michael Mullen at The Pentagon, Arlington, Va.,” November 17, 2008.

² Author's notes on a presentation by then-Secretary of the Air Force, Michael Wynne, at an Aviation Week Defense Technology and Requirements Conference, February 13, 2008.

³ John T. Bennett, \$40B Price Tag for Larger Army: U.S. Service Predicts Cost of 1.1 Million-Soldier Force,” *Defense News*, December 15, 2008, p. 1.

Part of the widespread concern about a budget shortfall has to do with expectations about the trend in the overall defense budget – or what defense budget planners refer to as the defense top line. Analysts generally assume, first, that as the war in Iraq winds down, war-related supplemental appropriations will decline and ongoing war costs will be absorbed into the regular, annual defense budget, and, second, that the regular budget itself will be constrained because of budget deficits and competing spending demands. Secretary of Defense Gates said just last week before the Senate Armed Services Committee that “the spigot of defense spending that opened on 9/11 is closing.”

For our part, CRS would rather not speculate about the top line trend. We can all do the budget arithmetic – and the arithmetic certainly leads you anticipate baseline budget deficits that exceed what, in the past, led to limits on defense spending. But, how much to spend for defense is, in the final analysis, a political decision for Congress to make and there’s no value added in our guessing about that.

Instead I want to focus on the other side of the equation, which is the cost side – why things cost as much as they do, and what the implications are for addressing the budget mismatch now and in the future.

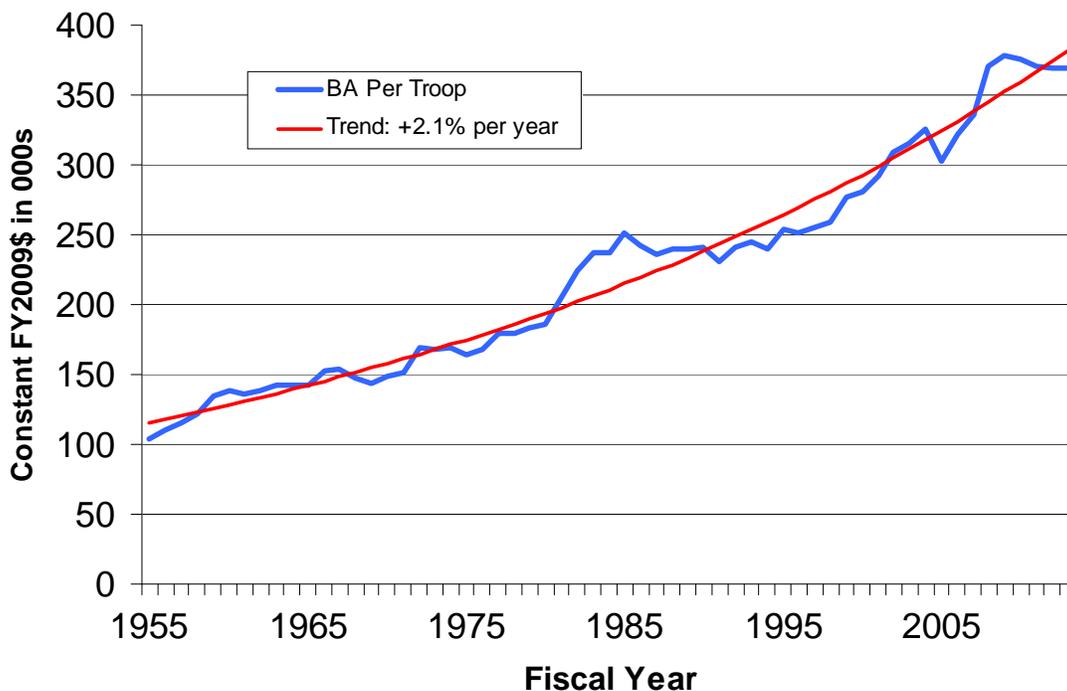
Why Does the Defense Budget Seem Tight?

If you look just at the total amount of money available for defense in recent years – and projected for the next several years – it is not at all apparent why there should be a budget shortfall of the magnitude the military services are warning about. The overall, enacted Department of Defense budget for FY2008 amounts to \$656 billion, including a base budget of \$484 billion and supplemental appropriations of \$171 billion. We don’t know the final FY2009 amount yet, because we still have a supplemental funding request to consider.

After adjusting for inflation, the FY2008 total is about 20% higher than the DOD budget in FY1985. FY1985 was the peak year of the buildup of the 1980s and also the second highest DOD budget in the Cold War era (the highest was in FY1952, during the Korean War). And the FY2008 amount is for an active duty force which was about 1/3 smaller than the force in the 1980s. For weapons acquisition, that is, for procurement plus research and development, the total in FY2008, when you include supplemental funding, was about \$240 billion. That is about the same as the peak in FY1985, which was \$220 billion in FY2008 prices – and the FY2008 amount is, again, for a force about 1/3 smaller. So the FY2008 budget appears comparable to earlier peaks in defense spending.

Other measures suggest the same thing. One approach is to compare current spending to the average trend in defense over time. If you track the total DOD budget per active duty troop, excluding war costs, funding has grown by a bit more than 2% per year above inflation on average since the end of the Korean War (see **Figure 1**). In some years, actual budgets were above the trend line, in other years, below it. In FY2009, the overall DOD base budget, not including war costs, is about 8% above this historic trend line.

Figure 1: Department of Defense Budget Authority per Active Duty Troop, FY1955-FY2013 (For FY1990-FY1992 and FY2003-FY2009, Base Budget Only, Not Including War-Related Funding)



Source: CRS based on Department of Defense budget data.

Another reference point is simply the growth of the defense budget over the past few years. Considering just the base defense budget, without including war-related funding, there has been a very large increase in defense spending over the past ten years. In all, the DOD base budget has grown by 43% above inflation since it reached its lowest post-Cold War level in FY1998. That buildup is about the same as the increase at the end of the Carter and beginning of the Reagan Administrations – which was about 40% above inflation from FY1980-FY1985.

If you take all of this together, you come away with the impression that today’s defense budget appears, by most historical standards, to be quite robust. But listening to the military services, to defense industry, to defense budget analysts in the think tanks you get a very different impression – that even now the budget is tight, and that if spending does not continue to climb, planners will face tougher and tougher choices. So why the disconnect? CRS’s analysis, quite bluntly, is that the budget seems tight because the cost of almost everything we been doing in defense has been accelerating upward too fast even for growing budgets to keep up.

And what is driving the cost of defense higher? In what follows, I will propose six answers to that question, and I will mention each of them at least very briefly. Following that, I will very briefly discuss a couple of themes that emerge from this analysis of defense cost trends.

The Growing Cost of Uniformed Personnel

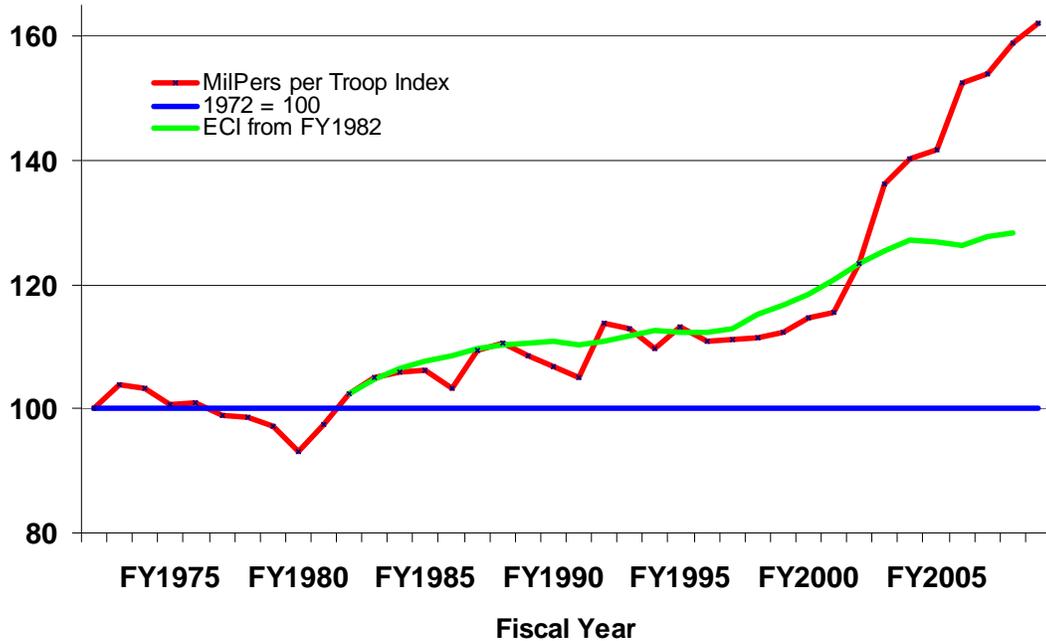
The first factor driving up the price of defense is, simply, the growing cost of uniformed military personnel. If you take the amount provided for active duty military personnel in annual defense appropriations bills, exclude supplemental appropriations, adjust for inflation using the Consumer Price Index (CPI), and divide by the number of active duty troops, again excluding war-related increments, you will find that an average military service member is about 45% more expensive, after adjusting for inflation, in FY2009 than in FY1998. This does not include the cost of medical care for service members, dependents, and recent retirees, which is financed in the operation and maintenance accounts, and which also has grown substantially. Nor does it include benefits that are not part of the national defense budget, and which are not, therefore, among the cost tradeoffs that planners directly face. These include tax advantages for service personnel and veterans benefits, including VA medical and educational benefits.

A long term perspective on the price of military personnel is reflected in **Figure 2**, which shows the cost of an individual active duty service member indexed to the inception of the all volunteer force in 1972. In brief, pay and benefits of military personnel declined in the 1970s because annual pay raises didn't keep up with inflation; jumped up in FY1980 and FY1981 with catch up pay raises of 11.7% and then of 14.3% -- that is, more than 25% over a two-year period; climbed very modestly in the remainder of the 1980s and '90s; and then rocketed up dramatically beginning in about FY1999.

The main increases over the past ten years include:

- Congressionally mandated annual pay raises equal to the Employment Cost Index (ECI) plus ½ percent in seven of the last eight years. The ECI is a measure of the average cost of pay and benefits in the civilian economy. Since FY1982, pay raises had fallen behind the growth of the ECI and the “ECI plus ½” formula was designed to catch up over a period of several years.
- Three rounds of “pay table reform,” requested by the Defense Department, which provided additional pay raises, sometimes of as much as 10%, to middle grades in order to improve retention of experienced personnel.
- Substantial increases over several years, requested by the Clinton Administration, in the non-taxable Basic Allowance for Housing (BAH), intended to eliminate differences in out-of-pocket on-base and off-base housing costs.

Figure 2: Military Pay and Benefits per Active Duty Troop Indexed to FY1972



Source: CRS based on Department of Defense budget data.

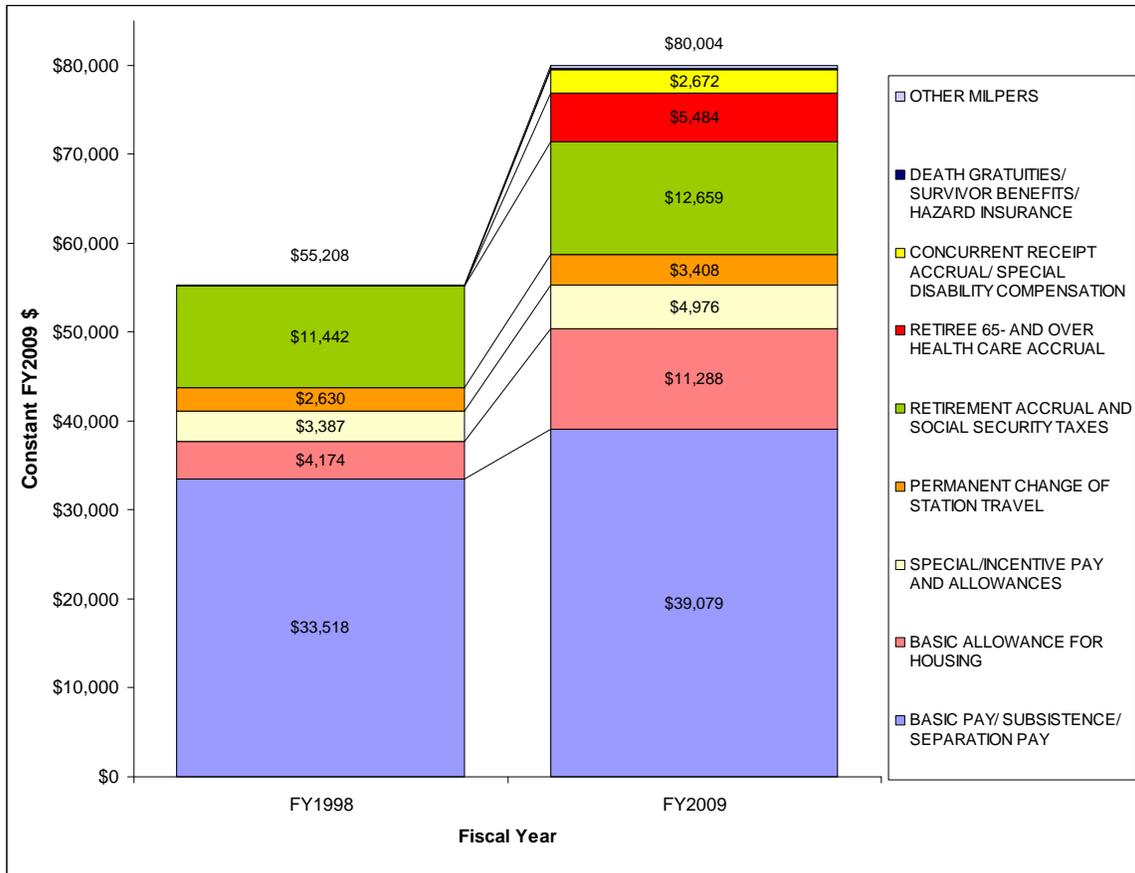
Those increases, along with changes in subsistence pay for officers, bonuses and special pays, and some other things, are reflected in higher take home paychecks of military personnel. In addition, there have been very large increases in retirement benefits, including

- Tricare-for-Life, enacted by Congress as part of the FY2001 national defense authorization act, and implemented in FY2003, which makes the military Tricare medical insurance system into a second payer for Medicare for 65-and-older military retirees. DOD pays \$10 to \$11 billion a year into the military retirement fund to cover future costs of this new benefit for current uniformed personnel, which is about 10% of the entire military pay and benefits package.
- Concurrent receipt of military retired pay and veterans disability payments for those with disabilities of 50% or more. Another congressional initiative, this is paid for out of the national defense budget function as a mandatory amount of about \$5 billion a year.
- Repeal of the “Redux” retirement plan, which had provided somewhat lower retirement benefits to military personnel who enlisted after 1986 than to earlier enlistees.
- The elimination of social security offsets in pensions of 62 and older survivors of military retirees who chose dependent benefits as part of their retirement.

Figure 3 shows the relative growth per troop in the major elements of both take-home pay and deferred compensation in the military personnel accounts, adjusted for inflation, between FY1998 and FY2009. As noted earlier, with everything included, these

elements of compensation grew by 45% above inflation. Even if you leave out the cost of Tricare-for-Life and concurrent receipt, military pay and benefits would still have grown by 30% above inflation.

Figure 3: Changes in Military Pay and Benefits per Active Duty Troop, FY1998-FY2009



Source: CRS based on Department of Defense budget data.

Before I go on with this discussion let me emphasize one point. The purpose of doing this analysis is not to address whether military pay and benefits are adequate or more than adequate or less than adequate. A discussion of that question is certainly important, but it goes way beyond the point I am making. The only purpose of this analysis is to address the issue of budget tradeoffs. If only a given amount of money is available for defense, the growing cost of personnel necessarily comes at the expense of something else. Moreover, others have addressed the issues of pay comparability, the value of deferred compensation, promises of medical care in retirement, and other matters at great length. Last year's Quadrennial Review of Military Compensation, for example, can give you chapter and verse on all of the key measures of compensation comparability.

That said, a couple of other points may also be worth noting. One has to do with analyses which show that there has been a military “pay gap” – i.e., that military pay has lagged behind average increases in compensation in the civilian economy. Usually, the pay gap is measured by comparing cumulative raises in military basic pay with a trend line that starts with pay in FY1982, after the catch up raises of FY1980 and FY1981, and adjusts upward annually by the amount of the Employment Cost Index. Using this measure, there was a significant pay gap by the end of the 1990s, which ECI plus ½ raises have been intended to correct.

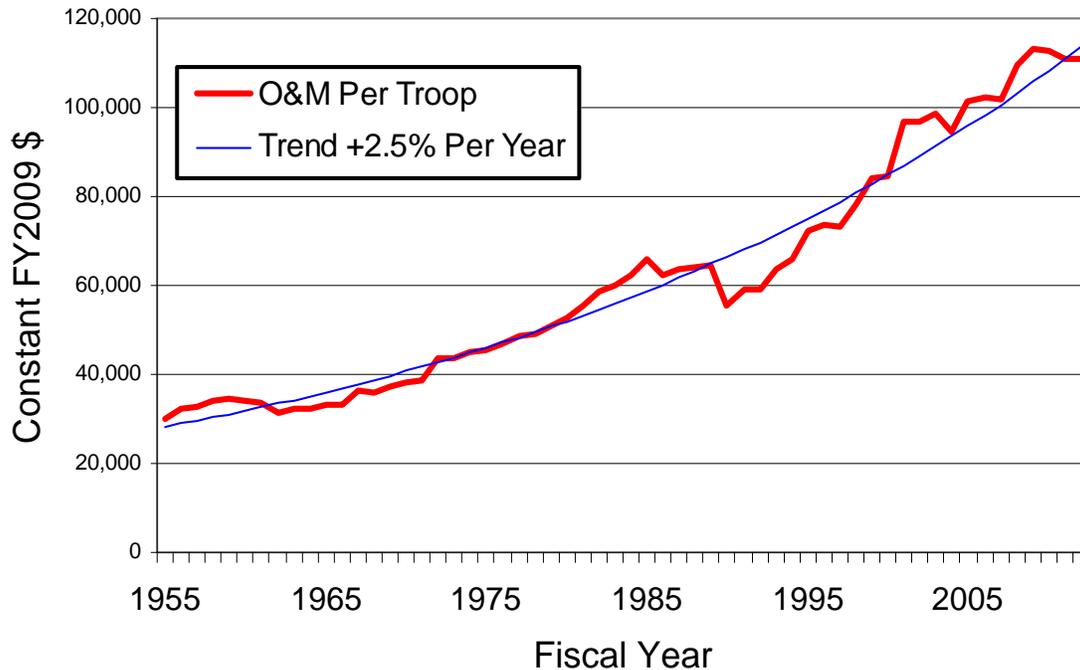
In measuring military pay, however, it is important to note that the amount service members take home every month includes both basic pay and the basic allowance for housing – and you might also want to include amounts for subsistence, which is provided both as pay and as a direct service. While increases in basic pay may still fall somewhat short of growth in the Employment Cost Index, when very large increases in the basic allowance for housing are included, the pay gap, measured as the FY1982 level adjusted for cumulative growth in the ECI, has been made up in recent years.

One other issue may be a matter for some further discussion. A frequently asked long-term budget question is whether it might be cheaper to rely more on reserve than on active duty forces. In the past, when Army National Guard (ARNG) combat units were, for the most part, regarded as a strategic reserve that would be called up only in the event of a major war, it was reasonable to calculate that Guard units were cheaper than active duty forces. Personnel and operating costs were typically 25-35% of those of active duty units, and investment costs were less, as well, because Guard units were often equipped with older material cascaded from active duty forces. Now, however, ARNG units are no longer regarded as a strategic reserve, but as an operational reserve available for regular deployment abroad. In that role, Guard units no longer appear much cheaper per day of availability – and might even be more expensive – than active duty forces, since they are available for deployment for only a fraction of the time of active units, and equipment levels must come closer to matching those of active forces.

Continued Growth in Operation and Maintenance Costs

A second cost driver is the continued, steady growth of operation and maintenance budgets. If you put together a spread sheet that shows defense funding back to end of the Korean war, exclude recent war costs, divide annual O&M budgets by the number of active duty troops, and adjust for inflation, you will come up with a trend line that grows by somewhere between 2.5% and 3.0% above inflation every year – year after year after year (see **Figure 4**).

Figure 4: Operation and Maintenance Funding per Active Duty Troop, FY1955-FY2013



Source: CRS based on Department of Defense budget data.

It is a bit difficult to analyze why O&M grows at such a relentless, steady pace, because the O&M budget covers all kinds of very different activities – advertising and recruiting; basic and advanced individual and unit training; professional military education; fuel costs; transportation; medical care for service members, their dependents, and some retirees; utility bills; facility maintenance and repair; warehouse and supply operations; purchases of spare and repair parts; day-to-day operation of weapons and equipment; overhauls, including sometimes extensive upgrades, of weapons and equipment; defense think tank studies of strategy and of trends in O&M; pay and financial management; and management of much of the Defense Department.

There are, however, a few pieces of the picture that collectively explain in very large part why O&M costs keep climbing.

One is that a very large share of the O&M budget goes to pay civilian Department of Defense personnel. In the FY2009 base budget, civilian pay in the O&M accounts was projected to total \$53 billion, about 30% of total O&M funding. While federal civilian pay and benefits have not grown as rapidly as those of uniformed personnel, they have outpaced the growth of inflation – as in most skilled occupations, compensation of federal civilian workers has grown in real terms over time.

Second, the O&M budget includes costs of operating and maintaining major weapon systems. Those costs also appear to have increased faster than base inflation, though the

reasons are complicated. Military service officials, particularly in the Air Force, have long argued that aging equipment becomes progressively more and more expensive to operate and maintain. CBO found some time ago that this was not a major factor in O&M. On the other hand, though it may not add up in itself to a huge amount of money, it may be one of a large number of individually minor factors that should be considered in concert to explain the larger trend.

Most observers also agree that new weapons are typically more expensive to operate and maintain than earlier generations of similar systems. Why this should be the case is very hard to explain. It is certainly at odds with trends in the civilian sector, in which reliability and maintainability of all kinds of goods have improved dramatically – consider automobiles, household appliances, and, especially, consumer electronics (leaving aside battery replacement). It appears, however, that while military developers promise lower operating costs, in the end they choose to pursue advances in performance instead.

Third, the O&M budget includes most of the annual funding for providing medical care to service members, their dependents, and many retirees (it does not include \$5-6 billion a year in military personnel accounts for pay and benefits of uniformed health care providers). DOD officials see growing medical costs, which have climbed much faster than overall inflation, as a critical long-term budget issue.

Fourth, and finally, the O&M budget finances operation and repair of military facilities. As the quality of life in the civilian sector improves, defense facilities also, in general, are expected to keep up, which, in turn, also may drive up costs in real terms.

This list is by no means exhaustive, but may help to understand some of the principal factors behind the continued growth of O&M costs. The corollary question, then, is whether this is a problem. Some may say no – that this is the cost of doing business and as long as growth isn't excessive, it is simply a fact of life for which budgets need to be adjusted. On the other hand, continued steady growth in the day-to-day cost of doing business appears to be at odds with experience in many parts of the private sector, in which improved productivity is the norm. The trend in defense O&M prices appears to be more similar to the trend in health care costs – which is universally seen to be a problem -- than to the trend in other economic activities.

Most importantly, within limited budgets, higher O&M costs will crowd out other things. The effect of growing O&M costs on trade-offs within the defense budget in the 1990s illustrates the issue. Defense advocates often complain about the dramatic decline of weapons procurement funding in the 1990s. Then-Secretary of Defense William Perry, at the time, agreed, saying that the “procurement holiday” of the early ‘90s had gone on long enough and needed to be reversed. The Defense Department’s target for many years was to get the procurement budget up from the \$45 billion range to at least \$60 billion. While \$60 billion for procurement appears quite constrained by today’s standards, achieving even that target proved elusive. The reason was the continuing growth of overall O&M costs. Successive long-term defense plans generally assumed that O&M

costs would level off in future years. When they did not, within limited budgets, the Defense Department shifted funds from procurement to cover must pay O&M bills. Year after year, therefore, planned increases in procurement funding were deferred due to the growth in O&M accounts.

As a side note, the problem should not be attributed only to the Clinton Administration. Underestimation of O&M costs, rather, was something the Clinton defense team inherited from the outgoing Bush Administration's defense plan and then was unable to correct. After adjusting for lower than expected trends in inflation, over the FY1994 to FY1999 period, for which we can compare Bush and Clinton defense plans in detail, the total amount the Clinton Administration spent on defense was, in terms of real purchasing power, not much lower than the previous Administration projected in its final six year defense program.⁴ O&M spending, however, was much higher, and procurement much lower.

CRS' conclusion is that steadily growing O&M costs devoured the budget for weapons modernization through most of the 1990s. The danger, of course, is that we will face the same tradeoffs again if budgets in the next decade are as tight as in the '90s.

Intergenerational Cost Growth in Major Weapons Programs

A third cost factor, and one that is a matter of extensive discussion today, is the apparently accelerating pace of intergenerational cost growth in major weapons programs. The issue of intergenerational cost growth in weapons programs often considered in conjunction with discussions of the growth in costs of programs compared to initial development estimates – but the two factors are really quite distinct. The systematic underestimation of weapons acquisition costs is an independent factor, which I'll mention next.

Examples of very large intergenerational leaps in weapons costs are all around. The F-35 fighter, which is the new "low-end" fighter for the Air Force, is now projected to have a unit flyaway cost of \$83 million each and a total unit acquisition cost of over \$100 million.⁵ In FY1985, the Defense Department procured 150 F-16s fighters, the previous low-end fighter, at a then-year price of \$16 million apiece, which is about \$30 million in FY2009 prices. In later years, F-16 prices climbed as new models incorporated more and more advanced technology. Still, the leap in costs is dramatic.

It is not, however, by any means atypical. Below is a quite illustrative table, prepared by Cecil Black of the Boeing Corporation, which compares numbers of major weapons in

⁴ The bulk of the reduction can be traced to two things – a cut of about 150,000 in active duty troops and reductions in missile defense funding. This discussion is based on CRS Report 95-20, "A Comparison of Clinton Administration and Bush Administration Long-Term Defense Budget Plans for FY1994-99," Dec. 20, 1994, by Stephen Daggett, and on subsequent unpublished update information. Both are available to congressional offices from the author on request.

⁵ Data from F-35 Selected Acquisition Report, June 2008.

selected categories procured in FY1985 with numbers bought in FY2008 (with funding both in the base DOD budget and in war-related appropriations). As I noted earlier, in FY1985, acquisition funding (again, procurement plus R&D) totaled about \$220 billion in FY2008 prices. In FY2008, acquisition funding totaled about \$240 billion.

Table 1: Recapitalization Rates: FY1985 vs FY2008
(quantities of weapons procured)

	1985	2008	Δ
Tactical Fighters	338	56	-282
Bombers	34	0	- 34
Other Fixed Wing	211	153	-58
Rotary Wing	354	373	+19
Missiles	87,113	13,471	-73,642
Tracked Combat Vehicles	2,414	1,258	-1,156
Tactical Vehicles	56,551	32,276	-24,275
Satellites (Unclassified)	10	1	-9
Ships	23	7	-16

Source: Cecil Black, Boeing Corporation.

The growing price of weapons does much to explain why the expense of maintaining even a smaller force structure than in the past has climbed so high. At current prices of major weapon systems, the “steady state” cost of replacing platforms as they reach the end of their planned service lives has become very difficult to afford, even with budgets that exceed previous peaks.

Why this is the case – and what to do about – is a matter that is far beyond the scope of this brief survey. In some cases, at least, cost has been driven up by an attempt to build systems to perform multiple missions with maximum capabilities in every dimension. The DDG-1000, which I cite only because it has been a focus of debate for the past year, and may well be terminated, may be an informative example.

In brief the DDG-1000 (formerly DDX) destroyer is a 15,000 ton ship. This is about the size of a World War II cruiser, and it is half again as large as the earlier generation DDG-51 destroyer it is intended, in part, to replace. Why is it so large? It incorporates the most advanced Aegis air defense radar and anti-air missile systems; the anti-submarine warfare capabilities of a dedicated ASW frigate; the ability to provide long-range fire

support to forces ashore from two guns and from vertically launched missiles; a full flag officer communications capability; the ability to deploy two helicopters or one helicopter and two UAVs for multiple missions, such as mine-sweeping and ASW; and the ability to carry aboard and deploy ashore either a marine unit or a special forces detachment. It also includes an advanced drive and multiple systems intended to reduce the required number of sailors. In short, it is all things to all requirements writers. The result is a ship that is now projected to cost between \$3.5 and \$4.0 billion each, and that cannot, therefore, be afforded in substantial numbers.

The rationale for developing a ship like the DDG-1000 is apparent. A large multi-mission ship has considerable advantages, including an ability to absorb future growth in capabilities. With a smaller force in prospect, it is understandable that the Navy would want some of its newer ships to be as flexible as possible. Still, the resulting cost of the ship has led the Navy to an internal debate about terminating the program and resuming DDG-51 procurement in its place. And, in any case, the DDG-1000 is too expensive to be produced in large numbers.

How typical is this of recent development efforts? Secretary Gates, at least, thinks it has become the norm. In his article on defense policy in the January/February issue of *Foreign Affairs* he wrote:

When it comes to procurement, for the better part of five decades, the trend has gone toward lower numbers as technology gains have made each system more capable. In recent years, these platforms have grown ever more baroque, have become ever more costly, are taking longer to build, and are being fielded in ever-dwindling quantities. Given that resources are not unlimited, the dynamic of exchanging numbers for capability is perhaps reaching a point of diminishing returns. A given ship or aircraft, no matter how capable or well equipped, can be in only one place at one time.⁶

Underestimation of Program Costs

Systematic underestimation of weapons costs has become such a significant element of defense costs that it can easily be seen as an independent factor driving up the overall price of defense. For the past six years, GAO has done annual overviews of cost trends in major defense acquisition programs based on a review of Department of Defense Selected Acquisition Reports. In the review it reported last March, GAO provided a very clear summary of what has been happening – and it is, frankly, not going in the right direction. **Table 2** is a summary of GAO’s findings.

⁶ Robert M. Gates, “A Balanced Strategy: Reprogramming the Pentagon for a New Age,” *Foreign Affairs*, January/February 2009.

Table 2: GAO Analysis of Major Defense Acquisition Program Cost Growth
(amounts in constant FY2008 \$)

	2000 portfolio	2005 portfolio	2007 portfolio
Number of programs	75	91	95
Total planned commitments	\$790 Billion	\$1.5 Trillion	\$1.6 Trillion
Commitments outstanding	\$380 Billion	\$887 Billion	\$858 Billion
Portfolio performance			
Change to total RDT&E costs from first estimate	27 percent	33 percent	40 percent
Change in total acquisition cost from first estimate	6 percent	18 percent	26 percent
Estimated total acquisition cost growth	\$42 Billion	\$202 Billion	\$295 Billion
Share of programs with 25 percent or more increase in program acquisition unit cost	37 percent	44 percent	44 percent
Average schedule delay in delivering initial capabilities	16 months	17 months	21 months

Source: Government Accountability Office, *Defense Acquisitions: Assessment of Selected Weapon Programs*, GAO-08-467SP, March 31, 2008.

To summarize the results: GAO compared the average acquisition performance of all the Major Defense Acquisition Programs (MDAPs) on which DOD reported in 2000, 2005, and 2007. There were 75 MDAPs in 2000, 91 in 2005, and 95 in 2007. On average, DOD underestimated R&D costs of MDAP programs in the 2000 program by 27 percent and in 2007 by 40%. It underestimated total acquisition costs of MDAPs in the 2000 program by an average of 6 percent, and it underestimated total acquisition costs of MDAPs in the 2007 plan by an average of 26 percent. In the 2007 program, 44 percent of the programs had cost growth of more than 25%, a thresholds established by the Nunn-McCurdy amendment, which triggers requirements for a thorough program review.

Most significantly, total cost growth in the 2007 programs is now expected to total \$295 billion, which is 18% of the overall \$1.6 trillion value of the major weapons programs in the acquisition plan. Such substantial unplanned cost growth undermines efficiency, further increases costs, and creates a need to restructure acquisition programs across the all the services. Some programs may have to be cancelled and many stretched out to adjust the overall budget to accommodate the resulting gap on funding.

New Requirements for Ground Forces

A fifth factor driving up defense costs is the apparent need to restructure the Army, in particular, and the Marine Corps to some degree, to be able to respond to new missions that have been adopted in response to the attacks of 9/11. The decision to engage first in Afghanistan and then in Iraq led the Army to accelerate plans to restructure its basic organization. Instead of a force designed for wholesale mobilization for a major war, the Army has become a modular force organized around fully manned and readily deployable Brigade Combat Teams (BCTs) designed for rotational deployment abroad. The Defense

Department, with broad support in Congress, has also decided to increase the size of the Army by 65,000 active duty troops, mainly to add six additional brigades, and of the Marine Corps by 27,000. When fully phased in, the addition of 92,000 active duty troops will cost more than \$13 billion a year in increased personnel and operating expenses of the Army and Marine Corps.

The modularization of the Army in itself will cost more than \$50 billion, mainly to fill out equipment requirements for the force.⁷ The conflicts in Iraq and Afghanistan have also led the Army to redefine its requirements for equipment in all its units. To fight the wars in Iraq and Afghanistan the Army has, in effect, established new standards that it sees necessary for force protection equipment, transportation equipment, and communications equipment for almost every unit in the force. And these requirements now extend not only to active duty units but also to National Guard combat units that have become part of the regular rotation base for deployment abroad, and therefore require largely the same equipment as active duty forces.

The cost of reorganizing ground forces to be more flexible and deployable is a significant factor that has driven the overall cost of defense somewhat higher. The Army's case for reorganizing and for adding to the size of the force is based on anticipated requirements for rotating forces abroad. Following the 2004 Quadrennial Defense Review, the goal was to be able to deploy 18 or 19 brigade combat teams abroad on a recurring basis. Later, the force generation goal was increased to as many as 23 forward deployed brigades. If active duty units are available for deployment one year out of every three, then 48 active brigades, as is now planned, would provide 16 deployable brigades a year. Additional brigades would be generated from the Army National Guard, which requires Guard units to be trained and equipped for regular deployments.

A Broader Array of Global Security Challenges

A final, and much less easily quantifiable factor that may affect the defense budget has to do with entirely new security challenges that planners have only begun to characterize. A good starting point in thinking about the range of new challenges is what has come to be called the "Quad Chart" in the Pentagon. I have attached one version of the Quad Chart at the end of this statement.

In brief, the Quad Chart divides security challenges into four categories: Traditional military conflicts between states with conventional military forces; irregular conflict such as insurgencies in Iraq, Afghanistan and elsewhere, catastrophic challenges posed by, for example, state-sponsored or not-state terrorist groups with access to weapons of mass destruction; and, a the newest category, disruptive threats from a range of competitors, including peer or near-peer regional or global actors, who would not attempt to compete with traditional U.S. military forces directly, but would instead try to identify and attack U.S. vulnerabilities. The quad chart divides these challenges according to likelihood and vulnerability. The premise is that traditional military threats are unlikely

⁷ See CRS Report RL32476, *U.S. Army's Modular Redesign: Issues for Congress*, by Andrew Feickert, updated January 24, 2007.

and the United States has such overwhelming capabilities that it is not vulnerable to them. Catastrophic challenges are seen as likely to appear, and vulnerability as high. Irregular threats are likely, but vulnerability low. Disruptive threats are regarded as unlikely, but vulnerability high.

The quad chart has important implications for the allocation of resources. If traditional challenges are unlikely, and U.S. vulnerability is low, the implication is that resources might be shifted away from investments in such capabilities in favor of other, higher, priorities. Much of what Secretary Gates has said in recent articles and speeches reflects this perspective. An effort to reduce investments in traditional military capabilities, however, implies a willingness to accept greater risks to U.S. security in some potential areas of conflict. While direct state-on-state conflict may appear less likely than in the past, assessments of the international security environment nonetheless point up the potential for future conflicts over many issues, including access to resources, economic and social dislocations caused by climate change, and remaining unresolved regional disputes. So traditional challenges could reappear in the future, and planners must decide in the present how much to invest as a means of hedging against them.

The apparent need to prepare for a broader array of new challenges than planners had assumed at the end of the Cold War may prove to have a very big effect on budgets – or it may not. It is not clear to what extent the new challenges may shape spending in the future. Some more spending to counter anti-satellite weapons and cyberwarfare may prove necessary – but it is very difficult to anticipate how much money will be required to counter other “disruptive” challenges that remain to be defined.

So far, the main effect of identifying new challenges seems to have been to push budget requirements marginally higher, though there may later be offsetting trade-offs.

Themes and Implications

A few themes – with some implications for policy – emerge from this review of the things that are driving up defense costs. One important theme is that the price of defense is driven in very large part by the cost of people – including both uniformed and civilian personnel in the Defense Department. This, in itself, does not imply that we should trim the defense budget by reducing pay and benefits or by abandoning increases in the number of troops in the Army and Marine Corps. It may, however, serve to point up the importance of considering other means of reining in personnel costs. This could mean reducing the size of the other services, or pursuing more vigorously than in the past reductions in the number of uniformed personnel performing support functions.

In general, when defense budgets are tight, the variable part of the budget, which bears the brunt of most cut drills, is investment, both in weapons and in facilities. You can certainly trim the budget by reducing investment without dire consequences for a few years. But ultimately, simply slowing the pace of weapons modernization will lead to an

aging and less capable force, and skimping on facilities can leave you with a backlog of problems.

This may suggest that if defense budget shortfalls continue, we will, later if not now, have to consider reductions in the number of personnel. And from a budgeting perspective, if you are going to eliminate something in the long run, the sooner policy-makers decide to do so, the better, because it saves money in the interim for other important things.

A second theme is that the military services have, to varying degrees, been caught in a budget bind that is by no means entirely of their own making. Rather, it is a result, in part of growing personnel costs and, in part, of changing guidance on priorities from senior decision-makers, including Congress. In the first few years after the end of the Cold War – and in the wake of the first Persian Gulf War – the guidance, implicitly if not explicitly, was that our technology would save us – particularly information technology that would give U.S. forces a critical advantage in seeing an arena of conflict. Now, faced with irregular warfare in Iraq and Afghanistan, the emphasis is on larger numbers of highly trained and flexible foot soldiers – the “strategic corporal” as a former Marine Commandant put it. High tech forces for “traditional” state on state, force on force conflicts are becoming a lesser priority.

The implications of that theme are varied. The Air Force, lately, has been subject to some criticism – to put it mildly – on a number of grounds. One complaint is about the growing cost of many of the programs the Air Force manages – including a large share of space and other programs that are fundamentally joint in nature, that are essential to all of the services. In its defense, however, the Air Force was, for many years, only doing what its leaders thought was the key task, which was to exploit U.S. technological advantages as much as possible in order to maintain military strength even if, as was commonly expected, the size of the overall force would continue to decline.

Another implication has to do with funding for the Army. As discussed earlier, one factor that has driven up the cost of defense in recent years is the urgent restructuring of the Army. At the end of the 1990s, the Army was being criticized because it had not adjusted, as the other services had, to the post-Cold War era. It was still organized, not for expeditionary, rotational operations abroad, but to fight one big war. As it became engaged in Iraq and Afghanistan, however, the Army embraced the need to reorganize itself into a very different, modular force with fully manned, more readily deployable units.

For the most part, the costs of modularization and the initial costs of adding to the size of the force have been financed with supplemental appropriations. A question now on the agenda is whether large supplementals should continue. To the extent there remain some additional Army restructuring costs, as there may well be, particularly to better equip National Guard units, Congress may want to consider whether to continue using supplemental funding for at least a limited additional period to cover one-time expenses associated with continued Army reorganization.

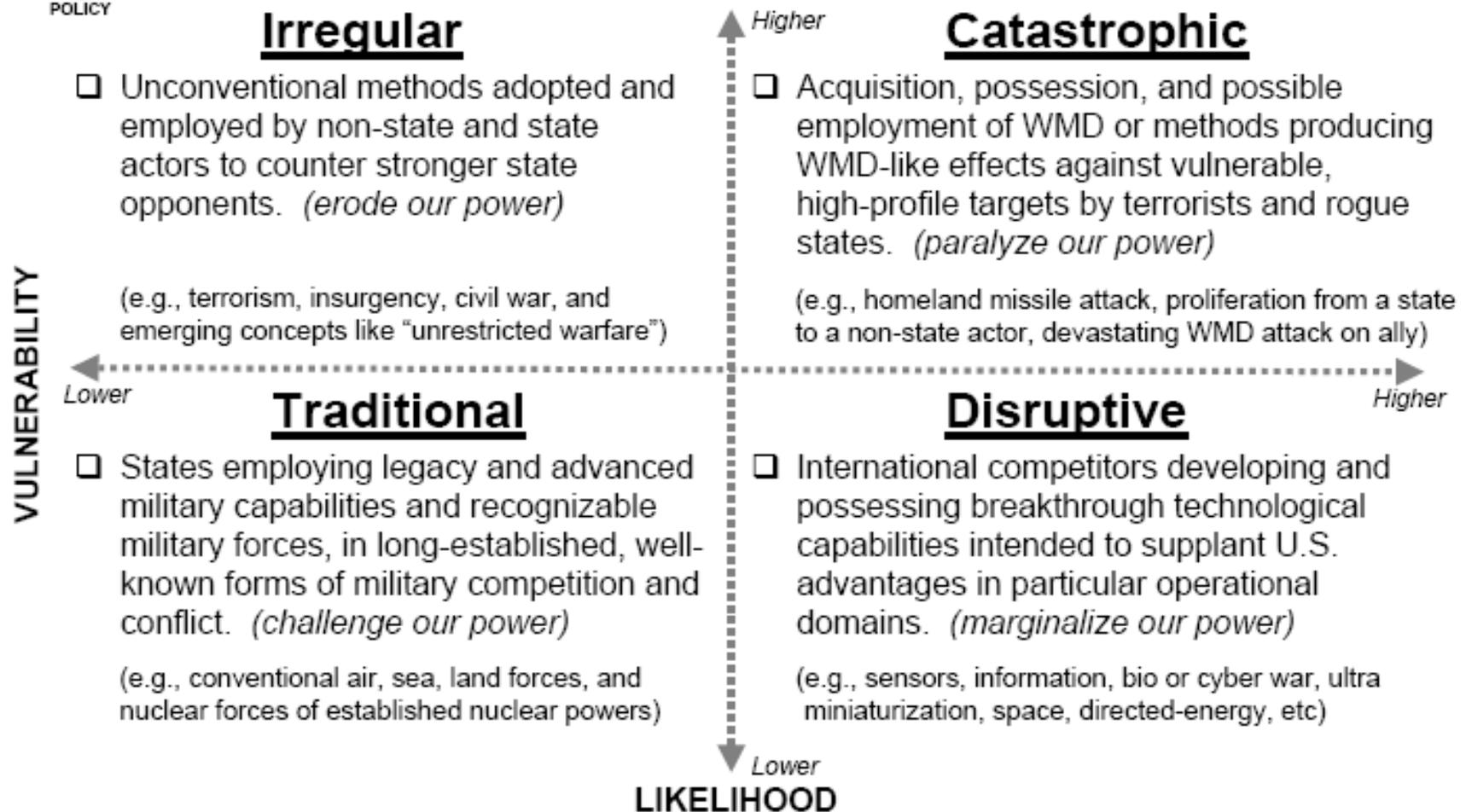
For the Budget Committee, this may present something of a dilemma. On the one hand, these requirements have long since gone past the point of being uncertain, unpredictable, and unplanned costs that should be financed through emergency appropriations exempt from caps on discretionary spending. On the other hand, to the extent that these investments are seen as one-time expenses, then it may make more sense to continue to pay for them with presumably temporary war-related appropriations, rather than build them into the base budget.

I'll be happy to address any questions you may have.



POLICY

Security Environment: 4 Challenges



Capabilities-based planning should apportion risk across challenges