

LONG-TERM SUSTAINABILITY OF CURRENT DEFENSE PLANS

HEARING

BEFORE THE

COMMITTEE ON THE BUDGET HOUSE OF REPRESENTATIVES

ONE HUNDRED ELEVENTH CONGRESS

FIRST SESSION

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LONG-TERM SUSTAINABILITY OF CURRENT DEFENSE PLANS

WEDNESDAY, FEBRUARY 4, 2009

HOUSE OF REPRESENTATIVES,
COMMITTEE ON THE BUDGET,
Washington, DC.

The committee met, pursuant to call, at 10:05 a.m. in room 210, Cannon House Office Building, Hon. John Spratt [chairman of the committee] presiding.

Present: Representatives Spratt, Schwartz, Becerra, Blumenauer, McGovern, McCollum, Melancon, Scott, Larsen, Doggett, Berry, Yarmuth, Connolly, Kaptur, Tsongas, Etheridge, Langevin, Ryan, Hensarling, Simpson, Nunes, Harper and Lummis.

Chairman SPRATT. Call the meeting to order.

I first would thank our witnesses and, for that matter, everyone else for coming to the hearing this morning on the long-term sustainability of our current defense plans.

Our object in this hearing is a better understanding of defense spending increases over the last 8 years and some notion, at least we hope to come out with, of the sustainability of concurrent defense plans for 2010 and beyond.

Over the past 8 years, the defense funding level has enjoyed a—defense spending has enjoyed a rather permissive environment; and it has increased at a rapid rate. The so-called base, or our non-war budget, increased between 7 and 8 percent; and the cost of our deployments in Iraq and Afghanistan increased steadily each year, surpassing \$185 billion in the year 2008. As a result, total defense spending, Function 050, more than doubled over this period, rising from \$335 billion in 2001 to \$691 billion in 2008.

Defense spending in real terms is now at its highest level since World War II. So it is reasonable to ask, can this trend continue? Given our fiscal condition, the receding economy, surging deficits, annual increases in defense on par with what we have seen over the last 8 years are not going to be easy to accommodate in the budget.

Secretary Gates implied as much himself. In his testimony recently before the House and Senate Armed Services Committees, he told the committee, and I quote, the spigot of defense spending opened by 9/11 is closing. He also said that the Defense Department is going to have to differentiate between, quote, those things that are desirable as opposed to those things that are truly needed.

Now, let there be no mistake about it. I have been on the Armed Services Committee for all of the 26 years I have been here, and I have been a stalwart supporter of national defense. We will spend

whatever we need to see that our national security needs are met. Only now more than ever, given the budget we have got, we must ensure that we do so in a fiscally sound manner.

For the government to make fiscally sound, responsible decisions it must first have a full accounting of its policies, including both DOD's base defense plans and its prospective war plans. Over the past 8 years, such an accounting has been lacking.

The government must also assess options, identify cost pressures, explore tradeoffs and assess opportunity costs; and this is what we want to begin exploring today. We have two excellent witnesses for this purpose. Michael Gilmore is the Assistant Director for National Security at the Congressional Budget Office; and Steve Daggett, an expert in defense policy, and budgeting in particular, at the Congressional Research Service.

I welcome you both, and I thank you for your willingness to come before the committee and for your excellent testimony, which I have read. I think you will be two good witnesses to help us understand past trends in defense spending and any implications for the future, long-term cost implications of the defense plans that we have in place now.

But before turning to either one of you, I want to turn to Mr. Ryan, the ranking member from Wisconsin, and ask him for any opening statement he cares to make.

Mr. RYAN. Thank you, Mr. Chairman.

Our conference is just winding down, so I expect our members to start coming soon.

Clearly, the bulk of Congress' attention has been focused on and remains to be focused on addressing the current crisis in our economy. But dealing with the economic crisis does not excuse or even diminish Congress' responsibility to the primary role of the Federal Government, and that is our national defense. So even as the economy has replaced the global war on terrorism on the front page, it does not replace our commitment to those on the front lines. Our job, as it has always been, is to ensure that American soldiers have the best available to them.

But as this hearing will point out, DOD's plan far exceeds what has been budgeted. Just as in the civilian sector, DOD's health care spending is increasing at an unsustainable rate; and, just as in the rest of the budget, these costs are beginning to eat into their discretionary budget. So I have a particular interest in hearing from both witnesses about what DOD is doing or at least planning to do to address this particular problem.

Finally, as everyone on the committee is well aware, DOD did not receive a clean audit last year. It has, in fact, been on GAO's high-risk list for as long as I can personally remember; and, regrettably, I have not heard any indication that these problems will be resolved in the near future.

My point here is that, while we must ensure our troops are fully funded, we cannot simply throw money at the Pentagon without proper oversight and accountability. I look forward to exploring our witnesses and the drivers behind DOD's growing budgets and how, together with Congress, it might be more efficiently transparently met in this important mission.

Thank you.

Chairman SPRATT. Thank you, Mr. Ryan.

One further housekeeping detail, I ask unanimous consent that all members be allowed at this point to submit an opening statement for the record.

Hearing no objection, so ordered.

[The prepared statement of Mr. Larsen follows:]

PREPARED STATEMENT OF HON. RICK LARSEN, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF WASHINGTON

Chairman Spratt, thank you for holding today's hearing on the Long-Term Sustainability of Current Defense Plans. I appreciate your dedication to thoroughly examining all aspects of our nation's fiscal future.

The previous Administration has left us with defense spending plans that are both unsustainable and unrealistic. The Pentagon's base budget has already reached its highest levels since World War II, and executing current defense plans will result in the dramatic defense spending increases for the foreseeable future. Plans to increase the size of the military, maintain aging facilities and equipment, procure new weapons, and develop more sophisticated technology all contribute to unsustainable growth in defense spending.

Unbudgeted costs for wars in Iraq and Afghanistan will further strain our defense budget in the coming years. The Congressional Budget Office estimates that funding for these operations will cost nearly \$900 billion over the next ten years in addition to the Pentagon's base budget.

Earlier this month, media outlets reported that officials within the Department of Defense were preparing a request for \$587 billion in defense spending in fiscal year 2010, a dramatic increase over the \$513 billion provided by Congress in fiscal year 2009. The Bush Administration projected that a defense budget of \$527 billion in fiscal year 2010 would be sufficient, and other media reports have indicated that the Office of Management and Budget plans to adhere to this budget cap. To be clear, an internal Defense Department document requesting \$587 billion is not a budget, it is a Christmas wish-list from the military services. Congress will write and enact the defense budget based on thorough discussions with military leaders, the civilian leadership of the Defense Department, and the White House.

In the coming year, the Department of Defense and Congress must make tough choices regarding future defense spending. As Secretary of Defense Gates has said, we cannot buy everything and do everything. Our nation faces enormous fiscal deficits, and our current recession will only make budget shortfalls worse. Facing this budgetary reality, we will need to scrutinize each major weapons program to reduce costs while ensuring that our military personnel have the tools they need to meet the threats we face.

I look forward to working with you, Chairman Spratt, both here on the Budget Committee and on the Armed Services Committee, to ensure that our future defense spending plans are both sustainable and consistent with our national security objectives.

Chairman SPRATT. In addition, for the record, let me note, if there is no objection, we will have the full written statement of Mr. Daggett and Mr. Gilmore entered in the record, so that you can summarize it as you see fit.

But, today, we have one panel, two witnesses and some excellent testimony, so I encourage you to take your time to give us a thorough review of what you have said.

And, Mr. Daggett, let us begin with you, sir. Or Mr. Gilmore. I will let the two of you settle it out.

Mr. GILMORE. It is your preference, Mr. Chairman.

**STATEMENT OF STEPHEN DAGGETT, SPECIALIST IN DEFENSE
POLICY AND BUDGETS, CONGRESSIONAL RESEARCH SERVICE**

Mr. DAGGETT. I am glad to start out.

Mr. Chairman, thanks very much for the invitation to testify.

Mr. Spratt, you and I go back I think 25 years or so now, so it is really a pleasure to see you. But I have to say I particularly ap-

preciate you asking me to be on a panel with Mike today. I know that, whatever question you ask, one of us at least will be able to answer it. Mike has done—Mike's work at CBO really has been the definitive work on the cost of long-term defense plans that all of us in town really use for further analysis.

Chairman SPRATT. Let me interrupt you here at this point, Stephen.

Recall when we launched the second Persian Gulf War against Iraq, CBO was the first to say, if this going to be a long undertaking, you have got manpower and rotational problems that the DOD did not acknowledge to us. CBO was on the front lines of that. You have done some excellent work also in projecting defense budgets. So we have got two good, disinterested experts here; and we are glad to have both of you.

Mr. DAGGETT. Thanks.

Mr. Chairman, if you look at what the leaders of the military services have said, what defense industry analysts have said, what analysts in think tanks have said, you come away with a strong sense that there is a real gap in the defense budget, a real mismatch between the cost of planned programs and what most are projecting will be the likely trend in the defense budget.

The Chairman of the Joint Chiefs has said that defense spending ought to be kept to a floor of 4 percent of GDP, which by my calculations would mean adding about \$100 billion in 2010 to the defense budget to accommodate. Each of the military services has said similar things.

The Chiefs of Staff and the Secretary of the Air Force for the past couple of years have been saying that the Air Force needs about \$20 billion more per year in acquisition accounts to accommodate its planned program. To put that into context, the overall Air Force acquisition budget, which is weapons procurement plus R&D, was scheduled to go from about \$63 billion in 2009 up to about \$70 billion by 2013. So, in effect, they are saying they are about 30 percent short in the amount of money available for the program that they want.

The Army has said similar things. They are projecting about 130 or \$140 billion base budget, and they are saying that their annual requirements are on the order of 170 to \$180 billion. A big piece of that is for war costs that they are concerned might not be funded if the war is financed out of the base budget without an accommodating increase in it.

The Navy has just increased estimates of the cost of its 30-year shipbuilding plan quite substantially and says now that there is a shortfall over the next few years in fighter aircraft procurement. So, by all accounts, there appears to be a gap between projected budgets and the cost of the program.

If you look, on the other hand, at the overall level of defense spending, you have to ask why that is true. If I look at defense in a historical context, as you noted, the 2008 budget is high by any historical standard. It is actually about 20 percent bigger after adjusting for inflation than the budget in 1985, which was the peak in the post Cold War period, except for one year in Korea.

The overall defense budget, just the base defense budget, excluding supplemental appropriations, has increased by 43 percent

above inflation since 1998, which is about as large as the buildup in the first Reagan administration. By the middle of the Reagan administration the Defense Department felt that programs were pretty well-funded, and we really did recapitalize the force with budgets in the 1980s.

A comparison that I like to do—and if we have slides up it would be one of the first slides—this is a slide that just shows the trend, the historical trend in the base defense budget, not including war-related funding going back to the end of the Korean War. And what it shows is that, on average, the defense budget has increased by about 2.1 percent per year above inflation year after year. In some years, the trend has been above the average; in some years, it has been below. In 2009, which is a measure I use, the budget is actually about 8 percent above the historical trend.

So, again, by historical standards, the budget appears relatively high. So the question I pose is, why the disconnect? Why on the one hand do the budgets appear relatively robust and on the other hand we hear from the military services that budgets are very tight and getting tighter?

I have six answers to that question, and I will just briefly go over each of them, and then I will leave that as a basis for discussion.

The first factor is just the increasing cost of military personnel, and if you look at the next slide that tracks it. This is a slide that shows the cost of a military service member, active duty military service member, index to inflation and then index to 1972, which is the inception of the all-volunteer force.

If you look at the trend, it tracks with what you would think. The cost of a service member declined in the 1970s because pay raises didn't keep up with inflation.

There were big catch-up pay raises in 1980 under the Carter administration; in 1981, under Reagan, 11.7 percent and then 14.3 percent. So about a 25 percent pay raise over a 2-year period.

The trend in the 1980s and 1990s was a very modest increase, if any increase at all, but then it shot up like a rocket after about 1999. By my numbers, a military service member in 2009 is 45 percent more expensive above inflation, in addition to inflation, than in 1998. And there are a lot of factors that went into that.

There were pay raises of the employment cost index plus one-half percent in 7 of the last 8 years. There were three rounds of pay cable reform in which people in the middle grades got larger pay raises to improve retention. There were very big increases in the basic allowance for housing to eliminate on-base versus off-base discrepancies in housing costs. That is on the take-home-pay side of the equation.

There were also very big increases in deferred benefits, particularly in retirement benefits, the biggest one being TRICARE for Life in which 65 and over military retirees may now use TRICARE as a second care to Medicare for military medical care; and that is a pretty expensive benefit. DOD pays into the military retirement fund about \$10 billion a year for the cost of TRICARE for Life, which is 10 percent of the entire military pay and benefits package. So a hugely expensive benefit.

The second factor driving up costs is reflected in the next slide, and that is the ongoing trend in operation and maintenance costs.

Operation and maintenance is one of the titles of the Defense Appropriations Act.

If you go back again to the end of the Korean War, take out recent war costs, index it for inflation and look at what the trend is relative to the size of the force per active duty troop, it increases over time at a pace of about 2-½ percent per year above base inflation. The question is, is that a problem? And my answer is I think you can make a strong case that it is.

That rate of growth above inflation is not as high as in some sectors of the economy, like health care, but we are all concerned that health care costs are eating into Federal budgets and undermining efficiency in lots of areas of the economy. And while the trend in defense operation and maintenance isn't as high it is still significant, and it is at odds with trends in the overall economy in which the trend has generally been in the opposite direction, the direction of improved efficiency, rather than less efficiency.

There are a lot of factors that explain that. Part of it is that a large part of the O&M budget is comprised of pay of civilian personnel, and pay of civilian personnel has increased over time in real terms above inflation, as it should. But in return for that you would also look for increased deficiency; fewer people doing more work. We don't seem to have achieved that across the board.

Another factor is increasing medical costs, which are a big part of the operation and maintenance account. DOD is terribly concerned about that.

Another factor is the cost of weapons operation and maintenance. The Air Force has complained for many years that, as its aircraft have aged, the cost of operating and maintaining them has climbed. It also appears to be the case that newer generations of weapon systems are more expensive rather than less expensive to operate and maintain, which again is at odds with the trend in the civilian sector.

What appears to be happening is that, although DOD is to some degree pursuing improvements in reliability and maintainability, when the final decision is made on what to procure they are really going after performance. And performance comes at a price, including difficulties in operational and maintenance accounts.

The fourth factor—a third factor, excuse me, driving up the cost of defense which is reflected in a table that I showed you is increasing intergenerational costs in major weapons programs. Again, that is the next slide.

This is a slide that compares the number of various—number of weapon systems in various categories procured in fiscal year 1985 and in fiscal year 2008. Those years are quite comparable in that the total acquisition budget in both years—that is, again, the amount of procurement plus R&D—is pretty close. It was about \$240 billion in 2008 and, if you adjust for inflation, about \$220 billion in fiscal year 1985. So pretty comparable amounts of money. But, in 2008, the budget is buying many, many fewer units of many different categories of weapon systems—aircraft, ships, missiles—pretty much across the board. That is a very simple measure of intergenerational cost growth in major weapons programs.

If you consider, for example, the F-35 fighter aircraft, which is going to be the mainstay both for the Air Force and for the Navy

and Marine Corps in the future, the unit flyaway cost of the F-35 is now projected to be \$83 million a copy. In 1985, the low-cost fighter for the Air Force, which is the kind of equivalent of the F-35, was the F-16. In today's prices, in 1985 the F-16 cost about \$30 million apiece. So an increase from 30 million to 80 or \$85 million a copy. That is not atypical of trends in weapons costs.

There certainly is a rationale for spending more on weapons over time because you get more capability in return. The issue is, has the tradeoff between the number of systems you can buy and the capability gotten to a point of diminishing returns? Secretary Gates is arguing really that it has and that we need to take, therefore, a very close look at the investment cost of weapons and the capabilities we are trying to build into new generations of weapons.

A fourth and very closely related factor that I look at independently from intergenerational cost growth in major weapons programs is systematic underestimation of costs on the part of DOD. The General Accounting Office has for the last 6 years taken a careful look at the status of major weapons programs in DOD, and this is a table that GAO provided, which shows what is going on in cost estimation, and it is not moving in the right direction.

One way to look at this slide is in what they did was compare the portfolio of what we call major defense acquisition programs. That is the major weapons programs above certain thresholds in cost in the system in 2000, 2005 and then in 2007. And if you compare cost estimation in 2000 with the accuracy of cost estimation in 2007, it has gotten worse over time. On average, in 2000, DOD underestimated the R&D cost of weapons programs by about 27 percent, which in itself is not very good. But, in 2007, they underestimated R&D costs by an average of 44 percent. If you look at it from the point of view of the impact on the overall budget, cost growth in the 2007 inventory of major weapons is projected now to total about \$300 billion, which is more than a year's worth of weapons acquisition, and it is about 18 percent cost growth over initial projections. So, in effect, we are losing almost one-fifth—we are losing our ability to acquire almost one-fifth of the weapons we plan to buy because we underestimate cost.

The fifth factor driving costs up has been the reorganization in the Army. The Army was criticized in the 1990s for not reorganizing itself very rapidly to be a more deployable force. Throughout the 1990s, it still had pretty much a kind of Cold War-oriented force which was designed to be mobilized for one big war, rather than to be able to be deployed on a rotational basis or expeditionary basis, as we say, abroad. Just as the war in Iraq was beginning, they were beginning to reorganize into a more modular force; and then the war in Iraq also had some lessons with it.

All of that has conspired to really drive up the cost of the Army, much of it as I think a one-time cost but some of it ongoing cost as well. Modularization in the Army is projected to cost in all about \$50 billion. Much of that has been paid for already, mainly in supplemental appropriations, but there remains some costs to be accommodated for finishing the modularization of the Army.

There has also been an increase of 92,000 troops in the Army and the Marine Corps, 65,000 in the Army and 27,000 in the Marine Corps. Once that is fully in place, that will add to military per-

sonnel and directly related operation and maintenance costs about \$13 billion a year. So that is built into long-term budgets as a long-term increase.

And then, in addition to that, the lesson of the war has been that the Army has taken away as one of the lessons of the war that it systematically underfunded what we used to call minor procurement for things like force protection equipment, communications and transportation. So that to outfit the Army in the future on an ongoing basis requires a substantially larger ongoing capital investment.

Add to that the need to provide equipment for Army National Guard combat units at a much higher level than we used to do in the past. Then you further increase costs. In the past, National Guard units were regarded as likely to be mobilized only very rarely in the event of a major war, and they were equipped largely with material cascaded from the active duty forces. Well, now they are part of the rotation base, so they need to be equipped at a level much closer to that of active duty forces. So all that is driving the cost of the Army substantially higher.

And then a final factor which is much harder to quantify is an expanded range of, as DOD puts it, challenges for which they think we need to prepare. And that is the next chart. This is what DOD calls the quad chart or the four challenges chart.

And what it does is—it is an interesting beginning point for discussion, I think. What it does is break down the kinds of challenges DOD thinks we will face in the future into various categories, and it organizes them according to vulnerability and the likelihood that they may materialize.

So DOD's official assessment is that the likelihood of what they call traditional state-on-state, force-on-force conflict is relatively low; and we are relatively not vulnerable to that because we are so militarily capable in those areas.

Irregular warfare has a high likelihood, 100 percent likelihood. We are engaged in it now. But they also argue our vulnerability to it being damaging to the U.S. per se is relatively low because we can manage it.

Catastrophic dangers, terrorists armed with weapons of mass destruction are, they say, a high likelihood and also high vulnerability. So that obviously would be a focus of additional investment in the future.

And then a new category that is interesting for discussion they refer to as disruptive challenges. Others, including near peer competitors in the future, trying to identify areas of U.S. weakness and exploit those militarily. So things like anti-satellite weapons or cyber warfare or other efforts to exploit the vulnerabilities of our communications networks and energy dependence and so on.

The investment implications of this, part of it is clear and part of it is not. Presumably, what this suggests is we should invest less money over time in traditional capabilities, because the likelihood of that kind of conflict is low and we are pretty strong in that area. That is hard to do. That involves taking a very hard look at the kinds of weapon systems we are currently building and making some choices among them. Whether we will actually be able to do that to what extent therefore to me is very unclear.

For the rest, most of these additional challenges appear to me to be primarily additive to the base budget we already have; and the cost of some of them could in the future be fairly high.

There is an ongoing discussion of what disruptive challenges we might face in the future. With China, it would be likely to challenge us directly in a force-on-force way or more likely to challenge us, if they do, with disruptive threats. And there is a lot of thinking that suggests they are more likely to challenge us in areas of our vulnerability.

With that, Mr. Chairman, those are what I see at least as the main things driving the cost of defense higher over the long term; and we can discuss further what we might want to do about it in some questions.

Chairman SPRATT. Thank you for an excellent presentation.
[The prepared statement of Stephen Daggett follows:]

PREPARED STATEMENT OF STEPHEN DAGGETT, SPECIALIST IN DEFENSE POLICY AND BUDGETS, CONGRESSIONAL RESEARCH SERVICE

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.

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.

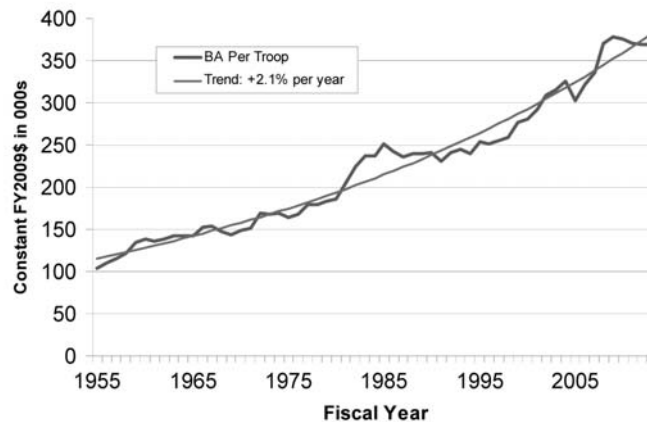
WHY DOES THE DEFENSE BUDGET SEEM TIGHT?

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

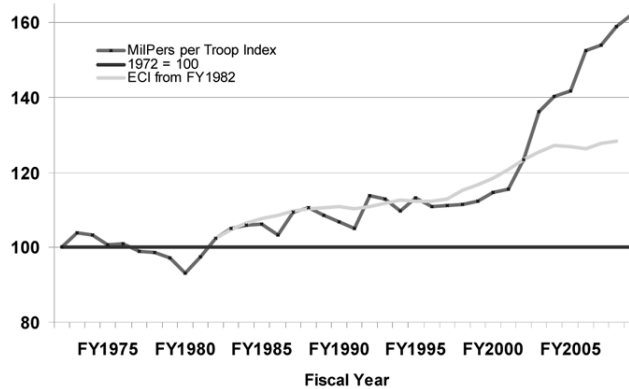
The first factor driving up the price of defense is, simply, the growing cost of uniformed military personnel. If you take the amount provided for active duty military personnel in annual defense appropriations bills, exclude supplemental appropriations, adjust for inflation using the Consumer Price 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 $\frac{1}{2}$ 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 $\frac{1}{2}$ ' 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



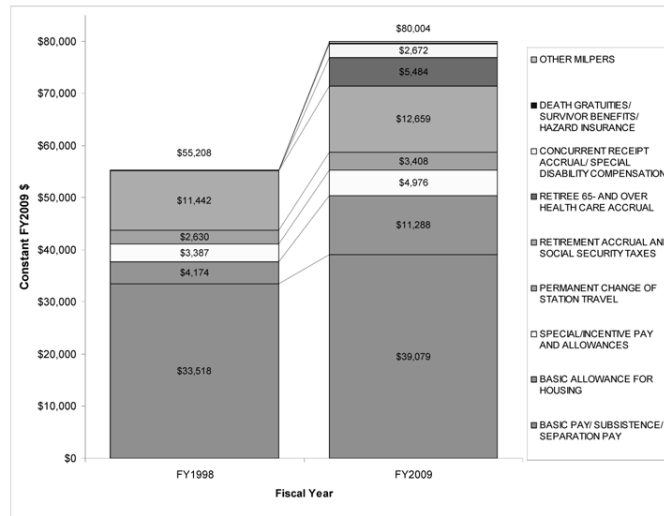
Source: CRS based on Department of Defense budget data.

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 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.

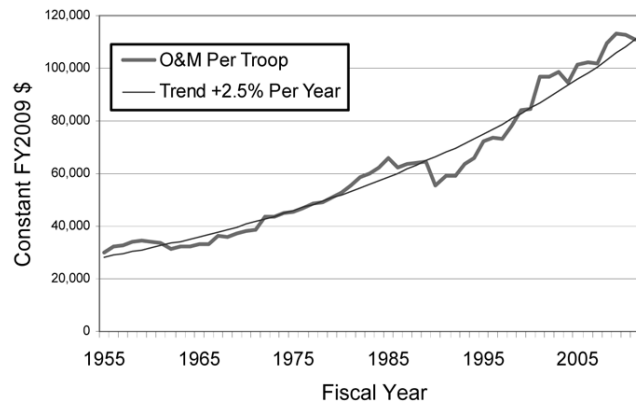
One other issue may be a matter for some further discussion. A frequently asked long-term budget question is whether it might be cheaper to rely more on reserve than on active duty forces. In the past, when Army National Guard (ARNG) combat units were, for the most part, regarded as a strategic reserve 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 mili-

tary 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 unformed 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 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	Difference
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.

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 deploy-

ment 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 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 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.

ENDNOTES

¹Most 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.

²Author’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.

³John 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.

⁴The 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.

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

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

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

Chairman SPRATT. Mr. Gilmore.

**STATEMENT OF J. MICHAEL GILMORE, ASSISTANT DIRECTOR,
CONGRESSIONAL BUDGET OFFICE**

Mr. GILMORE. Mr. Chairman, Congressman Ryan, members of the Committee, I appreciate the opportunity to discuss the sustainability of the defense plan this morning.

My remarks are going to be based on the report that CBO released early last month on the long-term implications of the 2009 future years defense program. So if I could have the first chart, please.

In these charts that I am going to show you this morning, funding is going to just be displayed in constant 2009 dollars. So the effects of inflation are removed and you can compare the buying power of past budgets, which is on the left of the chart, to projected future budgets, which is on the right of the chart.

In CBO's projection, DOD funding averages about \$549 billion annually in the period from 2014 to 2026, which is the projection period we considered. And that is more than the peak of the 1980's buildup, which is shown on the left of the chart, about \$485 billion. So a \$549 billion annual average in the future versus \$485 billion during the peak of the Reagan buildup, and that is to pay for a force one-half to two-thirds the size of the force we had during the mid-1980s.

Now, including what we label on this chart as potential unbudgeted costs, that could push that average in the future to \$652 billion a year, 35 percent more than the 1980's peak. And what we include in that unbudgeted cost category are, first of all, funding for continued operations overseas in the near term and the long-term. And in the long-term we made a somewhat arbitrary assumption of 75,000 troops deployed somewhere in the world 2013 and thereafter, and that would cost about \$60 billion a year. So that is \$60 billion worth of the unbudgeted cost.

And then the remainder of the unbudgeted cost is associated with historical experience in cost growth in major weapon systems, and that is about \$43 billion. So we project that in order to buy the current program without cutting back on the number of aircraft or ships or other major weapon systems bought, which, by the way, is typically the way the Department has handled the problem with cost growth, if you wanted to pay for the programs as they are currently laid out that would cost another \$43 billion a year, on average.

The sustained relatively high level of funding in our projection is due to, as Steve Daggett has already alluded to, growing costs of pay and benefits for military personnel and plans to increase of size of U.S. ground forces, as well as plans to purchase new systems, including systems with the advance capabilities the Department associates with military transformation that are turning out

to be much more expensive than the systems that they are going to replace.

Let me say a little bit more about each of the areas, the two areas of funding that are indicated on the chart, investment and operations and support. And let me turn first to operations and support, which currently is about 60 percent of the budget and which under our projections will grow to almost 67 percent of the budget over time in real growth. So let me turn first to operations—

Excuse me, next chart.

Let me show you another way of looking at defense expenditures. This showed you spending or funding. This looks at past and projected defense spending as a share of the economy. Defense spending averaged about 5.6 percent of gross domestic product in the 1980s. It declined to 3.8 percent of GDP in the 1990s; and it is currently about 4.5 percent of GDP, including the costs of the wars in Iraq and Afghanistan.

Now, in our projection, which shows relatively flat constant funding, defense spending would decline to 2.5 percent to 3 percent of GDP by 2026, excluding and including unbudgeted costs. And that assumes the GDP continues to grow. Right now, it is not.

Next chart.

Now let me turn to operations and support in more detail, currently about 60 percent of the budget. About 40 percent of this funding is for military pay; and the remaining 60 percent is for operations and maintenance, which is running units, maintaining equipment, and providing other benefits, including medical care, to military personnel.

In our projection, operations and support funding rises steadily in real terms, from \$307 billion in 2009 to \$380 billion in 2026, excluding that unbudgeted cost category, and \$443 billion, including those unbudgeted costs, which in this projection are associated mostly with continued operations overseas, because most of the costs of operations overseas are in the operations and support category. Not all of them, and I will say more about that in a minute.

Now, what is driving this growth is continued real pay increases and real increases in the cost of benefits, particularly medical benefits, and I will say more about that in a minute.

However, another source of growth is the increasing cost to operate both new equipment, which turns out to be more complex and more expensive to operate overall than the equipment it replaces, as well as aging equipment. The cost of aging equipment—maintaining and operating aging equipment are growing as well.

Let me have the next chart.

This is to bore in a little bit on the medical care cost dilemma that the Department is facing that, as already has been mentioned, is similar to the medical cost dilemma that the economy as a whole is facing. DOD's budget for health care, including accrual payments for care that will be provided to future retirees, so-called TRICARE for Life, is now about double the amounts budgeted in the 1990s, as shown on this chart. And CBO and DOD's own actuaries project that the Department's health care costs will increase steadily, \$5 billion in real growth from 2009 to 2013 and \$32 billion in real growth, or 79 percent, through 2026.

Unfortunately, the situation could be worse than that 79 percent growth if faster than projected medical inflation—and certainly history tells us we frequently underestimate the growth in medical costs—if faster than projected medical inflation occurs, that could cause a real increase in these accounts of 126 percent; and that is depicted by the dash line labeled unbudgeted costs.

The accrual payment growth is 6.25 percent on an annual basis nominal growth. Per capita pharmaceutical cost growth is 9 percent, and per capita direct care and purchase care growth is about 6 percent nominal growth. So all of those areas contributing to substantial growth in the Department's medical care costs.

Let me have the next chart.

This is a reprise of a chart that Steve showed. This is a somewhat truncated version showing per capita, meaning per active duty service member growth, in operations and maintenance funding. Measured on a per-service-member basis, DOD's O&M funding has grown steadily during the past 20 years, averaging \$2,100, 2009 dollars, per active duty member per year—that is shown here on this chart—which does not remove the current war costs which causes that large increase there over the last 5 years.

Then, in the future, we project that the 20-year trend will continue. And the fact that in the period there labeled FYDP, or future years defense program, that that black line above the dash line indicates that in DOD's plans, at least in the 2009 future years defense program, there isn't an indication there in its base program DOD was underfunding its readiness accounts. If it were doing that, then you would expect that black line to be below the dash line. So there is no evidence when you look at this metric that DOD was actually paying for peacetime readiness in the supplemental appropriations as opposed to its base program. And we currently project the per capita O&M funding will increase by another 20 percent through 2026 relative to today's level.

Next chart.

Let me turn to the investment accounts. I have given you an overview of operations and support, which was 60 percent of the budget. Let me turn to the other 35 percent of the budget. This shows past and projected funding for investment.

In our projection investment, which is funding to develop and purchase new weapons, would average about \$187 billion during 2014 to 2026; and that is about 10 percent below the 1-year peak in investment that occurred during the 1980's buildup of about \$207 billion.

Accommodating historical trends in cost growth would increase funding demands in our projection by about \$30 billion annually, or about a 15 percent increase overall, to pay for the program if we continued to try and buy it but historical trends and cost growth were realized. And the cost of purchasing new equipment to support continued contingency operations—remember, our projection assumes that we continue to be engaged overseas—could cause funding to advance and increase by another \$22 billion annually, on average, based on experience in Iraq and Afghanistan.

Next chart.

Chairman SPRATT. You got—if I could interrupt you there—two items: total unbudgeted costs, as opposed to contingency unbudgeted costs. What is the difference between them?

Mr. GILMORE. Contingency unbudgeted costs are associated with paying for refurbishing equipment and buying new equipment to replace worn-out equipment and damaged equipment if we continue to be involved in operations overseas. So our projection included an assumption that over the long run we would have 75,000 troops involved somewhere overseas, not necessarily Iraq and Afghanistan, although it could be there. So if you continued to have 75,000 troops involved overseas with the kind of operational tempo that we have been experiencing over the last couple of years, then that would, in our projection, imply an additional \$22 billion in investment, mostly procurement, annually to continue to replace and repair equipment associated with maintaining those operations. And then historical cost growth is the remainder of the unbudgeted cost.

So there is contingency unbudgeted cost, which is the first dash line, and then there is with total unbudgeted cost, which is the second dash line. And the difference between the two is just historical trends in cost growth.

If we take today's investment program and we experience what we have seen in the past with regard to growth in the cost of major weapon systems that are preproduction, then that would add another \$30 billion annually to the cost of the program on our projection. That assumes that you don't cut back on the amount of weapons that we are currently planning to purchase so that you don't further reduce joint strike fighter purchases in the Air Force below any aircraft year. You try to buy those aircraft, but costs go up as they have in the past and you just pay for those increased costs.

Have I made that at all clear?

Next chart.

Those two dash lines will be on every one of these investment charts, and it is most noticeable in the case of the Army because the Army would bear the brunt of these continued operations overseas. So you see that there is a large amount of unbudgeted costs—a relatively large amount of unbudgeted costs associated with contingency operations in this chart. That is because the Army would bear the brunt of those operations if they occurred.

One of the—this is Army investment, so I just showed you investment overall for the Department of Defense past and projected. Now I am going to show you past and projected investment for each one of the services, beginning with the Army.

One of the most noticeable features on this chart is that recently, due to funding provided in supplemental appropriations to replace and repair equipment associated with operations in Iraq and Afghanistan, the Army has received as much investment, mostly procurement funding, in supplementals as it has requested in the base budget. And that is shown by that spike there, which, by the way, is well above the peak in investment that occurred during the Reagan buildup in the 1980s.

Now, in the future, CBO's projection of Army investment averages about \$36 billion annually, so that is towards the right hand part of the chart, excluding unbudgeted costs and \$58 billion in-

cluding them. Historical trends in cost growth for Army systems, particularly for combat vehicles such as those being developed under the future combat systems program, account for about 40 percent of those unbudgeted costs. And the remaining 60 percent is associated with paying for the costs of equipment used in continued operations overseas if that were to occur.

Now, saying a little bit more about the future combat systems program, which as you can see there takes up a good deal of the funding in our projection, FCS funding exceeds \$100 billion through 2026, about 6 to \$8 billion annually in the projection. That would buy 13 brigade sets of equipment through 2026, with another two planned to be purchased beyond 2026. But that is about one-half of what may be needed for the Army, because the Army will have 19 active heavy brigades, seven heavy brigades in the Army National Guard according to current plans, and three to five prepositioning sets of heavy equipment that may have to be replaced with FCS.

The plan now is to eventually replace all of the equipment in the heavy brigades with FCS. So something will have to—if that doesn't occur and if they stick with the plan to buy 15 brigade sets, as opposed to more than twice that amount, something will have to be done to maintain the existing equipment, the Bradley fighting vehicles and the Abrams tanks that they will have in several thousands of numbers. So CBO's projection includes more than \$3 billion annually to replace an upgrade to combat vehicles that will not be replaced by the future combat system.

Let me show you the next chart, which illustrates one of the challenges the Department faces overall but in particular the Army faces with its combat vehicle fleet.

The top part of this panel shows on the left the weapon systems that were purchased during the 1980s and the 1990s, and in the 1980s a lot of Abrams tanks and Bradley fighting vehicles were bought. And then on the right hand part of the chart, on the top, it shows the number of vehicles that will be procured under the future combat systems program current plans, one brigade set a year.

Then, on the bottom, the chart shows funding to buy those weapon systems, the funding that was necessary during the 1980s to buy the number of tanks shown on the chart and then the funding that under current Army estimates will be required to buy future combat systems at a rate of one brigade set a year. And under current Army plans, which we hear, by the way, may change, development in some of the FCS combat vehicles contained in this projection may in fact be ended. They may end up developing a fewer number of those vehicles.

The Army will spend at levels comparable to those in the 1980s to purchase about one-quarter the number of new vehicles. Those purchases alone would not be sufficient to sustain its force, as I mentioned; and absent that \$3 billion a year in annual funding that we include in our projection to upgrade and replace older systems, the FCS purchases displayed in the chart wouldn't be sufficient to sustain the force, as I said; and the aged Army combat vehicles would double over the long term from about 10 years currently to 20 years by 2026, which is about double the desired fleet wide age. So the additional \$3 billion a year or something in that

neighborhood will probably have to be spent if more FCS vehicles are not bought, and which is the current plan.

Next chart.

Let me turn to the Navy. This shows past and projected funding for investment in Navy systems.

CBO's projection indicates that funding for investment in Navy and Marine Corps weapon systems will average about \$58 billion annually during 2014 to 2026, which is slightly less than the average funding of \$61 billion during the period of the 2009 FYDP, 2009 to 2013. And through 2018, in this projection anyway, funding will be comparable to that of the mid-1980s, and that is to support a fleet of about half the size of the ship fleet that we had during the 1980s.

Funding for shipbuilding, excluding historical cost growth, so there is that ships' portion of the funding at the top of the chart, will average about \$21 billion through 2026. That is about 40 percent greater than it is in 2009.

Funding to develop new weapon systems, the bottom part of the chart, shows the development funding for new systems. And you can see that funding to develop new weapon systems would decline from \$19 billion in 2009 to \$11 billion in 2013 and eventually in our projection to about \$7 billion by 2026. And, as seen in the chart, such a steady, substantial decline in RDT&E funding would be inconsistent with experience during the past 20 years. But, nonetheless, that is the implication of current plans. They will buy out the joint strike fighter program and F-18 EF and multi-mission maritime aircraft, and they will not begin to develop the replacements for those systems even though towards the end of this projection the F-18 EFs that have been bought over the last several years will be nearing the end of their service lives.

Next chart.

Finally, let me show you our projection for Air Force investment that is shown on this chart. CBO projects that Air Force investment will average about \$70 billion annually during 2014 to 2026, versus about \$64 billion annually during the 2009 to 2013 period of the 2009 future years defense program. Accommodating historical cost growth would increase funding demands by about \$6 billion annually. And note that a substantial portion of the other funding depicted in this chart is associated with intelligence activities that experienced substantially increased funding since 2001.

Next chart.

Let me just bore in here for a second on one of the particular challenges facing the Air Force, and that is the modernization of its tactical aircraft fleet. So this is the Air Force analog of that chart that I showed you a few moments ago for combat vehicles in the Army. On the left, we have the numbers of aircraft that were purchased in the past. So there were large purchases of F-16s, particularly F-16s and F-15s, during the 1980s. Then there was not much aircraft procurement during much of the 1990s. Then we began to buy the F-22, which are the pink bars on the chart. And then, in the future, we will buy in increasing numbers the joint strike fighter for the Air Force rising in this projection to 80 aircraft a year, although we have heard that part of the increase in funding in the fiscal year 2010 future years defense program that

the Department has developed would be to buy an additional 30 joint strike fighters a year for the Air Force. That would raise that number to 110 a year if that were correct.

Then on the bottom part of the chart you can see the funding, and you can see that recently and in the future we will be spending at levels roughly comparable to the levels that we spent during the 1980s but to buy substantially fewer aircraft. Those aircraft have gotten a lot more expensive.

Let me just give you a bit more detail on that. During 1981 to 1988, 1,877 aircraft were purchased, for a total of \$54 billion. That is an average unit cost of about \$30 million. Most of those were F-16s. During 1993 to 2001, 105 aircraft were purchased for \$9 billion, an average unit cost of \$80 million per plane. And during 2001 to 2008, 156 aircraft were purchased. Almost all of those were F-22s, although that is the beginning of joint strike fighter purchases as well, so about 1/10th—less than 1/10th the number of aircraft that were produced during 1981 to 1988. And those were purchased for \$32 billion and an average unit cost of \$210 million.

So during 2001 to 2008 we purchased about 60 percent of the aircraft that we did during the 1980s—excuse me, we spent about 60 percent buying aircraft in 2001 to 2008 that we spent during the 1980s, and we bought 10 percent of the aircraft. So 60 percent of the funding, 10 percent of the aircraft.

And then in the future the joint strike fighter which will replace those—well, not entirely replace those F-16s, those dark blue bars there that were purchased in the 1980s, we will be buying those at \$80 million a plane, versus \$30 million a plane during the 1980s.

That concludes my remarks, and I am happy to take your questions.

[The statement of Mr. Gilmore may be accessed at the following Internet address:]

<http://www.cbo.gov/ftpdocs/99xx/doc9972/02-04-Long-Term—Defense—Testimony.pdf>

Chairman SPRATT. Well, thank you both. We asked for numbers, and we got them back in spades.

But, interestingly enough, the one thing you didn't mention was the one thing that 4 years ago or longer Senator Kerry and President Bush when they debated were put to the question, what do you think is the greatest threat facing the United States today? Kerry answered, a terrorist equipped with some kind of nuclear device; and President Bush readily concurred. It is the one thing they commonly agreed upon. You haven't touched upon that at all.

By my calculation, if you scrub this budget down, go to DOE and scrub its budget down for CTR and for Nunn-Lugar and all the different components of nonproliferation, you come up with about \$2 billion. Is my approximation pretty close to what you would approximate is what we are really spending on this particular threat, nonproliferation? Steve? Mike?

Mr. DAGGETT. Well, there are two major categories in the defense account. One is cooperative threat reduction, which is in the DOD budget; and that has been running about \$400 million a year. And then Department of Energy has a substantially larger nonprolifera-

tion program, counterproliferation program, largely to buy nuclear material and so on. I think you are right. I think it has been running about a billion and a half a year.

There are other initiatives in the State Department as well. I mean, the whole counterproliferation, international counterproliferation efforts. But those don't involve lots of money. The money for it is really in Department of Energy. And so I think your total is about right.

Chairman SPRATT. And it has been pretty steady at that particular level for several years at least.

Mr. DAGGETT. Yes.

Chairman SPRATT. How do you account for that? Do you think there is an underallocation here simply because it gets squeezed out by other programs, or this is all the Pentagon and the Department of Energy think can be sensibly applied?

Mr. DAGGETT. Well, I know there is an ongoing program. The big budget driver, as I understand it, is purchasing nuclear material; and there are agreements, international agreements on how much we are going to purchase each year. You might be able to increase that to some extent, but I think that is what drives really the cost of it.

You asked me are there other things we should be doing that we are not doing? I don't know. That is a bit beyond what I have looked at in detail. I can certainly get back to you.

And Amy Wolf, who works with us, has worked very closely on counterproliferation programs. The Harvard Belfer Center does a study every year of the status of nonproliferation efforts, and they make a number of recommendations. They have made a number of recommendations for changes in policy.

I have looked at it pretty closely a couple of years ago and didn't see many that required a lot more money. It was more international diplomatic initiatives and things of that sort that they were looking at. But I would be glad to look more at that and talk with you and with Scott about it.

You can certainly identify, I think, some additional areas of possible investment. I am not sure it would be a huge amount of money.

Chairman SPRATT. Mr. Gilmore, if we cut through all of your charts and information here to the basics, to the bottom line, what are we spending today on the base defense budget for national defense and what are we spending typically in terms of supplementals for emergency purposes, primarily Iraq and Afghanistan?

Mr. GILMORE. Let us see. In 2009, I think the Department requested \$517 billion and the Congress appropriated about \$515 billion in the base budget; and there was about another \$180 billion or so in supplemental funding for operations in Iraq and Afghanistan and other purposes.

Chairman SPRATT. So that comes to nearly \$700 billion?

Mr. GILMORE. Pretty close.

Chairman SPRATT. And in real terms how does that compare to the post-war expenditure levels in the post-war period?

Mr. GILMORE. It is a peak. I mean, if you look at a chart that is on our Web site that displays defense funding over the past 60 years, I think we are at a peak in inflation-adjusted spending.

Chairman SPRATT. Compared to Korea?

Mr. GILMORE. It has been a pretty steady increase, so I think it is an overall peak.

Chairman SPRATT. Now, we have received from DOD from time to time bills for reset—renovation, repair, reconstitution and repurchase, really—of equipment that is either badly damaged or worn out due to the operating environment and the OPSTEMPO in the two war zones we find ourselves now, Afghanistan and Iraq. Have either of you paid any particular attention, spent any effort to try to unpack what is in those substantial requests that started at about 15, \$16 billion?

The Chiefs told us that if we stopped the war in Iraq tomorrow we would still have these costs for at least 2, 3, maybe 4 years at a substantial level. But the level has risen considerably from about 15 or \$16 billion several years ago to around \$50 billion today, just under \$50 billion today.

Mr. GILMORE. I think a year and a half or 2 years ago, Grant Lussier in our division produced a report on the Army reset program trying to, as you put it, unpack some of the details, which turns out to be a challenge to do, given the information that is available from the Department. Nonetheless—

Chairman SPRATT. Give me some examples under the acquisition of new equipment.

Mr. GILMORE. Yes. A lot of the increase is associated with buying new equipment for the Army. Substantial numbers of up-armored, high-mobility, multi-purpose wheeled vehicles, Humvees that were not in the force at the beginning of the conflict, as everyone knows.

A substantial amount of money, about \$20 billion, I think—I could be wrong—for purchases of mine-resistant, ambush-protected vehicles. Substantial amounts of money to purchase the most modern versions of Army trucks, the trucks built as part of the so-called Family of Medium Tactical Vehicles Program. A lot of those trucks were bought for National Guard units that lacked the most modern trucks. And, in fact, a large number of those trucks are just kept in the theater, and the units that come in haul in on those trucks.

So a substantial portion of that growth has been associated with buying that kind of new equipment that was not in the force prior to the operation.

Mr. DAGGETT. And I have one point. It really is unclear to me to what extent the Army has filled out its evolving requirements and plans for that kind of minor equipment. One of the tasks for the next administration, it seems to me, is to really unpack where the Army is going and what bills remain unfunded and try to distinguish what is to replace war equipment and what is to fill out modularization of the force and what additional kinds of equipment needs they might identify because of lessons of the war to equip the Army National Guard.

They spent a lot of money on it already. I am just not sure how far along they are in meeting all of those additional requirements. It could require a substantial amount additional if you do every-

thing the Army wanted. It could be almost all of it has already been spent. I just don't know the answer to that. And I don't know that anybody really—

Mr. GILMORE. Well, I think the Army has indicated that, in fact, there are substantial additional bills that will come due. I read, anyway—I can't verify the accuracy of the reports—that the Army has claimed that they are about \$40 billion a year short in their investment accounts of where they would want to be if they could fully modernize and fully equip their force the way they want to. I have just read that; I haven't had a chance to get any information that would actually verify that figure.

Chairman SPRATT. These requests come not in the base budget, but in, primarily, largely in the supplemental.

Mr. GILMORE. Well, it is a combination of the two. For example, some of the increases that occurred early on in the procurement requests in the supplementals were buying equipment associated with modular conversions, the conversion of the Army's combat brigades from division-centered to brigade-centered, modular brigades that were more capable of independent operations. Although, now the Department claims that almost all those costs, if not all those costs, are being requested in the base budget. But, initially, there were amounts requested in the supplementals.

So it is a combination of the two. But, as I pointed out on that chart, in Army procurement, the Army has gotten as much recently in procurement in the supplemental as it is requesting in its base budget.

Chairman SPRATT. Typically, when advocates or opponents speak of the percentage of defense expenditures as a percent of GDP, they talk basically about the defense budget and, to some extent, Function 050, which would include the DOE nuclear program as well. But they generally do not include some direct collateral costs, such as veterans. The veterans bill today is running about, for both mandatory and discretionary, about \$95 billion a year. They rarely mention homeland security, an account that didn't even exist in the budgets several years ago and today is at \$35 billion to \$40 billion, maybe half of which is really classified money, but there is at least a \$20 billion to \$25 billion increase there. And they rarely mention military aid under the 150 account for foreign purposes. And you could go down the list.

Do you think, as we try to arrive at that measure, what percentage of our GDP are we allocating to national security, that these accounts should be included?

Mr. Daggett?

Mr. DAGGETT. Yes, it is really a policy issue for Congress.

I will say, when I look at it—I have spent a lot of time talking about personnel costs. And when you are tracking personnel costs, if you just look at the defense budget, even the 050 account, as a whole—in which concurrent receipt, is part of 050, not 051—you don't get a whole picture of it, largely because of VA costs.

So it may affect allocation decisions in this sense, that you are not capturing the full cost of personnel when you just talk about what the budget cost in DOD is, that the full cost of hiring somebody in the military is actually substantially higher than just the DOD cost because of future veterans' benefits and so on.

So it is useful, in general, to keep that in mind. But whether you have an overall budget account for national security or whatever as a way of doing it, you know, I don't have an axe to grind on that. But I do think visibility of all those kinds of costs is certainly useful from a planning point of view.

Chairman SPRATT. I think the message that both of you bring us in great detail in your testimony today is that, typically when we think about cost growth in the defense business, we think about the investment accounts, R&D and procurement, because the percentage increases over and above baseline tend to be substantial over time.

But now we have a defense budget where the personnel accounts are swelling just as much as the—or substantially, if not as much as the investment accounts. O&M, of course, is growing substantially because we have troops deployed in two theaters and still troops stationed at places throughout the world.

It is hard to contain a budget which has got every account in it demanding substantial funding because of its level of engagement right now. Would you agree with that?

Mr. DAGGETT. My discussion is that personnel costs really drive a large part of the defense budget and have really driven costs up across the board. The implication I draw, by the way, is, to the extent that there is a decision to cope with that by reducing spending in some way, if you just look at the investment accounts, you are really focusing on a relatively narrow part of the budget disproportionately.

So you really do need to consider the cost of personnel, both uniformed personnel and civilian personnel, in this budget environment. If you think the budget is going to be tight for the foreseeable future, eventually you are going to have to look at the size of the force. And, from my point of view, just from a planning perspective, if you are going to draw down the size of the force in the future, the sooner you decide to do it, in a way, the better, because then you save resources in the interim for other investments.

So, absolutely, I think it really is important to keep in mind that a big, big part of the budget is driven by the cost of people.

Chairman SPRATT. Mr. Gilmore, one final question. Some time ago we asked, after not getting the information from DOD, we turned to CBO and said, would you give us your best estimate of what our engagement in Iraq and Afghanistan has cost to date and what it is likely to cost over the future?

Could I just put those two charts up to see if those estimates are still applicable in the eyes of CBO?

This shows that, if you take funding all the way back to 2001, primarily, solely almost, for the first couple of years for Iraq, and then for Iraq and Afghanistan together, from 2001 through 2009, the total amount of war funding to date, the supplementals has been \$864 billion. That is primarily a matter of record, and it is just a matter of which costs were allocated to that theater and which costs went elsewhere.

Is that still—

Mr. GILMORE. That seems correct to me.

Chairman SPRATT. Now, second chart. Picking up from there, we agreed that CBO would estimate a drawdown in troops over a 5-

year period of time to about 75,000 troops in both theaters in that zone of the world. And once the force level reached 75,000, that would be the steady state, it would continue at that level for the next 5 years.

The total then came to 867. Of course, that is a projection, not a record number. Is that still roughly what CBO would project for the costs under that scenario?

Mr. GILMORE. That looks consistent to me with what was included in the recent outlook.

Chairman SPRATT. This is driving a large part of that O&M account that we saw swelling as you showed us the numbers earlier, then, and the reset and reconstitution account as well.

Mr. GILMORE. Yes, although there are underlying reasons separate from operations in Iraq and Afghanistan that the operations and support costs have been growing, as both Steve and I have mentioned. But the recent rapid increase is obviously due to the need to fund those operations.

Chairman SPRATT. Thank you very much, both of you, for your fine testimony.

Mr. Ryan?

Mr. RYAN. Thank you, Chairman.

This is a very interesting hearing. And for those of us who aren't on Armed Services or Approps, this is very helpful to us.

Okay. A number of questions.

Mr. Daggett, I want to go to your cost overrun chart. I think it is chart 6 of your testimony. The change in total acquisition cost from the first estimate, 6 percent increase in fiscal year 2000, 18 percent overrun in fiscal year 2005, and 26 percent in fiscal year 2007. Is that right?

Mr. DAGGETT. Right.

Mr. RYAN. That is a staggering increase. Can you drill down into that number and give us a sense of why, how, and what direction are we headed now?

Mr. DAGGETT. The question is, why is it getting worse? It seems to be getting worse, not better—

Mr. RYAN. Right.

Mr. DAGGETT [continuing]. In spite of really pretty serious efforts on the part of DOD to get a better handle on it. There is a cost-analysis improvement group at the Pentagon that really does go over cost projections very carefully.

Mr. RYAN. So what is happening?

Mr. DAGGETT. I think a couple of things. And this is drawn mostly from reading GAO's testimony on it. GAO really has looked very carefully at this, and this is from GAO's latest analysis.

Part of it might just be cyclical. Typically, weapons cost growth is greatest as systems and full-scale engineering development begin to enter the production phase, because we are finally getting down to what it is going to take to produce it. So you get larger cost growth at the end of the development cycle. And it could be just that part of the inventory of weapons is in that part of the cycle. I have had some discussions with people at OMB who think that that is part of—

Mr. RYAN. Is it the higher-tech nature of the equipment and, therefore, the less predictability?

Mr. DAGGETT. Yes. The other issue that GAO, in particular, points to is a willingness to accept very high levels of technical risk in the development process. And DOD and GAO do measures of that. They call them TRLs, technical risk levels. And for each major development program, there are various elements of technology in the development effort, and they assign various TRL levels to it. And there does seem, just by that measure, to have been a greater willingness to accept higher levels of risk in the development process, which then leads to schedule delays and cost increases.

Let me say, part of that is driven, by the way, by just the length of time it takes to develop a weapon. If you are going to develop something that is not going to be fielded for 10 or 20 years, and you look at what is going on, say, in electronic developments in the civilian sector, it is proceeding so rapidly that what you say is, well, I can't afford to leave that behind; that new technology is going to be very helpful to the weapons system. So we have to assume its availability in the development process. So we will look ahead to what we think is technically reasonable and assume we can build it. But then, when you actually try to develop it or do it, it becomes more difficult than you think—the schedule slips, cost increases, and so on.

But if you really look at what GAO is saying—and, again, they are looking at this very closely—that is one of the drivers of it, just a general across-the-board willingness—again, not for bad reasons, not with an unreasonable view toward what is going on—to get into a program on the assumption that we will make it work later.

Mr. RYAN. A 20 percentage point increase in 7 years, that is just staggering.

A lot of people on our side of the aisle like this idea of a 4 percent GDP floor on spending. As a budgeteer, I don't like the idea of any floor on any program; caps, yes, but floors, no.

But looking at the CBO's—your chart—you don't have your charts numbered here, and you had about 75, so looking at the one which is percentage of GDP—

Mr. GILMORE. I think it was my second chart.

Mr. RYAN. Yeah. I have them all detached here.

So give me a sense for where we are headed, percentage GDP, if your health care projections go off. And then I want to ask you about that.

Your TRICARE projection kicks in in, what, 2002, where it really starts taking off, your accrual projection? And that is probably chart 5 or 6.

Mr. GILMORE. The program was initiated—I mean, prior to 2001 or 2002, it was pay-as-you-go, and they just paid for expenses not on an accrual basis. Then TRICARE for Life was instituted, and it was decided to fund it on an accrual basis. So the funding every year is based on a projection of what you need to invest today in order to pay for future retirees, and that is when the costs began to increase.

Mr. RYAN. We concur with accrual principles.

I want to get at this. So, looking at the accrual rate of TRICARE and all of the other health care issues, what goes into your projection? How much of it is health inflation? What health inflation rate

do you use? Do you use the same health inflation rate the trustees at Medicare use? And how much of it is demographics?

So breaking that projection down, how much do you ascribe to demographics, how much do you ascribe to health inflation? And how do you arrive at your health inflation rate?

Mr. GILMORE. I can't give you a breakdown on demographics; I would have to get back to you on that. But the demographics of the DOD retiree population, we will have to look at how much that is changing over time. You don't have exactly the same problem there that you do in the economy as a whole. I can't give you more detail on that off the top of my head, but I can get back to you on that.

But, in any event, in terms of the growth rates that are assumed in these projections, the growth rate for the accrual costs and the TRICARE for Life accounts that we use is the same as the one that the DOD actuaries use. We have looked at it, and it seems reasonable to us, and that is 6.25 percent nominal growth.

Mr. RYAN. Do they use the same rate that the Medicare trustees use?

Mr. GILMORE. It is comparable.

And then there are other things that are budgeted for in those health accounts, as was displayed in my fourth chart, I guess, including pharmaceutical costs. And per capita pharmaceutical nominal growth is 9 percent in 2014, which we assume slows to 6 percent by 2026. And that is consistent with the kinds of growth rates that CBO and others use when they project pharmaceutical costs for civilian—

Mr. RYAN. And even with all that, your percent-of-GDP projection stays under 4 percent in the out-years?

Mr. GILMORE. Yes, it does. On that second chart, "Defense Resources as a Percentage of Gross Domestic Product," there is the dotted line, administration plan with unbudgeted costs. That includes all of the unbudgeted costs that I showed you on all those charts. You insert the upper end of the range in every case for all those dotted lines. And that includes the dotted line for total unbudgeted costs in the Military Medical System chart, which incorporated even faster growth than 6.25 percent for accrual and 9 percent per capita pharmaceutical growth, cost growth, and 6 percent per capita for direct and purchase care cost growth.

Mr. RYAN. What is the measurement of the crowd-out within the DOD budget in nominal terms with new health care costs versus all other military spending?

Mr. GILMORE. Well, medical spending, I mean, that is one way to look at it—

Mr. RYAN. You know how we do this all the time on mandatory versus discretionary with the entire budget, and how we show that the crowd-out is occurring so rapidly over the years. Give me an apples-to-apples comparison with the DOD budget.

Mr. GILMORE. Well, about the best I can do off the top of my head is just return to chart 4, which shows funding for the military medical system of about \$40 billion currently. And that could grow to as much as \$90 billion by 2026, so more than a doubling over 17 years. So that is more than 100 percent cost growth over that period versus about a 7 percent growth overall in operations and support costs.

So our projection for needed funding for the military medical system is growing seven, eight times more rapidly than O&S costs as a whole.

Mr. RYAN. We have had these complaints in the last number of budgets about the administration trying to sneak, you know, what we would consider base spending into the supplemental bills. And they did a lot of this 3, 4 years ago. We kept criticizing them; they did a little less of it.

Are you now saying that, from your estimation, they are not sneaking base spending into supplemental bills and that the supplemental bills themselves are pretty much truly supplementals?

Mr. GILMORE. We really haven't taken a position—

Mr. RYAN. Mr. Daggett, please feel free. I mean, either one of you can answer the question.

Mr. GILMORE. We haven't taken a position on whether a certain kind of funding is appropriate in supplementals or the base budget. There are arguments on both sides of that.

But in terms of—what many people have argued in the past, for example, that the costs for converting combat brigades from division-centered to a modular design should be part of the base budget, that was originally in the supplementals and it now seems to be part of the base budget.

Other people have argued that the upgrades that are made to the Bradleys and Abrams when they return from the theater—because the Army determined that they have to be torn apart completely, and since they were torn apart and we have to put them back together, we might as well upgrade them to the most modern configuration; not an unreasonable argument—but some people have argued that those costs ought to be borne in the base budgets since those kinds of upgrades had long been part of the Army's desired base program but not funded because of other constraints. Those kinds of upgrades still are in the supplementals, although there are fewer of them now because there are fewer tanks, for example, in the theater.

So I think what you will find is what you stated, that over time the amount of money that is included in the supplementals that a number of people would argue should be, in other circumstances, funded in the base budget has been reduced, but I don't think it has been entirely eliminated.

Mr. RYAN. And, last question, our airplanes, our fighters, what is the cost of a Joint Strike Fighter and an F-22?

Mr. GILMORE. The Joint Strike Fighter, the current projection for the Air Force version is that it will cost about \$80 million apiece. And the F-22 is on the order of \$180 million or \$190 million apiece.

Mr. RYAN. And the F-16—which, in my mind, I should think of Joint Strike Fighter as the new version of an F-16, right? F-16s were \$30 million?

Mr. GILMORE. They were \$30 million when we bought them in the 1980s, although the more recent versions of the F-16s, which are more capable, which have been sold to some foreign—

Mr. RYAN. These are in real dollars, right?

Mr. GILMORE. Yes, these are in 2009 dollars. All the numbers I have given you are in 2009 constant dollars.

The more recent versions of that plane that have been purchased, I think, by the United Arab Emirates, which are more capable—they have, for example, much better radar—have been more on the order of \$40 million to \$50 million.

Chairman SPRATT. You are talking flyaway costs as opposed to program unit cost, are you not?

Mr. GILMORE. I am talking procurement unit costs. Procurement unit costs are a little bit more than flyaway.

Chairman SPRATT. Of course they are. They have the R&D in them.

Mr. GILMORE. Well, no, Mr. Chairman, I am just talking about procurement. I am not including the R&D costs. The flyaway costs don't include things like initial spares and that sort of thing.

So procurement unit costs are a little more than flyaway unit costs, which are both less than acquisition unit costs, which include the R&D.

Mr. RYAN. Thank you.

Chairman SPRATT. Ms. Schwartz.

Ms. SCHWARTZ. Thank you, Mr. Chairman.

And thank you for your testimony and information.

I think all of us understand, and I think would agree, that protecting and defending our Nation and getting the size of our military and our costs in DOD right is one of our most significant responsibilities as Congress, and I certainly do. Certainly we are facing a budget that is the largest since World War II, at \$527 billion. So we want to get this right, and appreciate your information.

And I think, as both the chairman and the ranking member pointed out, that having information that is accurate from DOD is extremely important, and that has not been so easy, given the previous administration sometimes not sharing all of this information that we would like.

Really, just one comment and one question. I did want to thank the chairman for his asking questions about the reset costs. I do recall, in a previous budget hearing, asking DOD whether all the reset costs for replacement of equipment and repair of equipment from the war zone in Iraq and Afghanistan have been accounted for, and his answer was yes, absolutely, 100 percent. It was rather stunning. I am happy to get that testimony.

But if, in fact, that is not correct, which is what you are suggesting, that is pretty important for this new administration to understand what the cost for replacement of equipment and repairing of equipment is going forward. And, of course, the war continues in Iraq and Afghanistan, as you project.

My question really has to do with also some problems that I realize came out of the supplemental discussions more than DOD, but wondered if it related to DOD and whether you could speak to them. And that is, certainly there have been concerns about inefficiencies and overspending in contracting. And, again, the stories have come out, by and large, around the wars in Iraq and Afghanistan, particularly with private contractors.

Could you speak to whether you have looked at—again, we are in tough economic times. We are looking for the greatest efficiency going forward, and that includes within DOD. And we have a new

administration that is very keen on greater transparency and accountability for use of Federal dollars.

So could you speak to whether there, in fact, have been problems in terms of contracting and costs that we might be able to rein in?

And yet, again, I am coming at this from a point that we do want to and need to make sure that we are the right sized Department of Defense and that we are protecting both our troops in the field, of course, but then also, going forward, are prepared for the challenges and threats ahead.

But given that, could you speak to any of the specifics you might on efficiencies and what greater transparency and accountability might lead to within DOD so that we might apply those costs where we need to?

Mr. GILMORE. We have not—and it is not our function at CBO to do audits of these contracts. The Special Inspector General for Iraq has done that and published quite a bit of material about his findings. That is not something that we have done.

What we have done and published last August is a report that summarized what we thought was the total amount of funding that had been spent in the Iraq theater on contractors that support military operations in Iraq and neighboring countries, such as Kuwait. And we concluded that, through late 2007, about \$85 billion had been spent for those purposes, and that, if the current rate of spending continued, which was probably likely given that force levels weren't going to change that much—they were going to decline somewhat, but not dramatically, at least not at that time, not yet—that probably, by the end of 2008, about \$100 billion would have been spent on contractor support of our operations.

The other thing that we took a look at was whether it would have been cheaper for the military to perform those functions, those support functions itself. And what we concluded was it wouldn't have been, not unless we thought we were going to be continually involved in an occupation of Iraq of the size that we have had continually, meaning virtually always, in which case, then, yes, it would be cheaper for the military to do that itself, but—

Ms. SCHWARTZ. Is there a point at which, 10 years, 20 years—

Mr. GILMORE. Yeah, if you don't think you are going to be involved in it continually, then it is actually cheaper to hire contractors and then shed them when you are no longer engaged in those activities and only hire them when you are.

Ms. SCHWARTZ. That makes sense, although it has now been 8, 9 years, and you projected out for another 10. So it is much longer than temporary. We hope it is temporary, too, of course.

Mr. GILMORE. I won't dispute that.

But with regard to your specific question about efficiencies, we have not looked at that, but the Iraq Inspector General has and I think GAO has. They have reached the conclusions that they have.

Ms. SCHWARTZ. Well, you get a sense of \$100 billion out of—it is not the \$527 billion. It is out of the supplemental; it is out of the \$800 billion.

Mr. GILMORE. At that time, it probably would have been on the order of \$100 billion out of \$600 billion or \$700 billion was spent on contractors.

Ms. SCHWARTZ. Maybe it is something for us to continue to consider going forward.

Mr. GILMORE. Yes, but I would point out that probably about two-thirds of the defense budget is spent on contractors, one way or another. Contractors develop the weapons systems. There are a lot of contractors that perform other functions. And so if you look at that \$515 billion, there is a third of it that is spent on military personnel, but—

Ms. SCHWARTZ. Well, I am not suggesting that we not use private contracting. I am just suggesting that—and I believe there is quite a bit of oversight. In some situations where I visited, certainly, Defense contractors said there is someone from DOD there auditing what they do all the time.

So I am just saying that, under the previous administration, there were some real issues with this, again, to those audits, and that we ought to make sure that we are spending precious public dollars as efficiently and effectively as we might. So, maybe a question for another day and for someone else.

Thank you.

Chairman SPRATT. Mr. Simpson.

Mr. SIMPSON. Thank you, Mr. Chairman.

I would just note that there has been a question of contract management under every administration, not just the previous administration. And, in fact, you don't go into whether contract management has been appropriate or not. I sit on the Energy and Water Subcommittee, and we have looked at a lot of the contracts that have been done with the Department of Energy and some of the programs. The waste treatment plant at Hanford that started off at \$4 billion and went to \$14 billion causes us a great deal of concern.

I wonder about the relationship between the contractors who work for DOD, who have a close relationship with them. How much contract management oversight is there? And you don't go into that, do you?

Mr. GILMORE. No, we don't.

Mr. SIMPSON. Let me ask a couple of other questions. In your budget, when you are looking at your numbers here, do you take into account defense operations that are outside of the DOD? Department of Energy, for example, the weapons complex, the non-proliferation funds that the chairman was talking about, those types of things? Because those are certainly as much a part of defense as anything else we do.

Mr. GILMORE. In the projections that I showed you, we focused just on budget function 051, which is the Department of Defense. Considering 050 would add another \$18 billion to \$20 billion. And then there would be amounts in addition to that that Chairman Spratt mentioned, substantial amounts, associated with veterans affairs and other activities, homeland security, homeland defense. But my projections focused just on Department of Defense.

Mr. SIMPSON. There is a proposal that this administration is currently looking at, is taking the weapons complex out of civilian management and putting it under DOD. Have you looked at that proposal at all?

Mr. GILMORE. We have not.

Mr. SIMPSON. Let me ask you about one of the costs that you mentioned, health care costs, as driving the O&M budget. How does that compare with private-sector health care increases that we are seeing in the private sector?

Mr. GILMORE. In the projections that I showed you, the growth rates for the cost of DOD medical care and pharmaceuticals and so forth are all comparable to those that CBO uses in its projections for the costs in civilian health care.

Mr. SIMPSON. That is surprising, seeing as how I thought government control of that was going to keep the cost down, and that is why we were going to go to universal health care, but that is another question.

What about the long-term increase in inefficiency that you would expect when you have new technologies and so forth? We don't see that within—I think, Mr. Daggett, you said we don't see that within the Department of Defense as we do in the private sector. As an example, the first cell phone I bought cost \$960. Today they will give you a cell phone.

Why don't we see that type of thing within the Department of Defense?

Mr. DAGGETT. There is a huge literature that discusses that, and the bottom line on it is seeking performance rather than reliability, availability, and maintainability, as they say.

For its part, the DOD has been looking pretty hard at that in the last couple of years. There is a new team that is working at DOD to actually get involved in the operational testing or development testing of major systems, with a view toward identifying possible improvements in long-term maintainability of the system. But that is a new initiative. I mean, we will have to see how that plays out.

DOD itself is very concerned about the fact that the cost of operating and maintaining weapons systems really hasn't come down as costs have come down in the civilian sector. And you look at any part of the civilian sector, not just electronics, but automobiles or aircraft operation and maintenance, the trends are not as good in DOD, and sometimes they are going the opposite direction in DOD from what is going on in the civilian sector.

So, you know, it is certainly an area that DOD recognizes and that they are trying to work at. That said, if you go back to the 1980s, that was an issue back then, as well.

But, again, what drives it here is, when you are developing a weapons system, what are you looking for? You are looking for performance, and you are trying to push the envelope, in a lot of cases. In electronics, you are trying to get a complete picture of the battlefield. And that involves—to the extent that you could use off-the-shelf consumer technology to do that, then it would get cheaper over time. But a lot of these are unique kinds of things that DOD alone does that there is not a parallel requirement for in the civilian sector, so they are left to do it themselves. And it becomes a very costly kind of thing to try to do it.

Another aspect of the problem is, again, given that it takes so long to develop a weapons system, some of the old software and even the computer systems that you are using are getting pretty out of date. So when they do break, you have to go back to the manufacturers and get old systems or you have to replicate it in

a way. So it is more expensive to replace it than it typically is in the civilian sector.

So there are a lot of factors that drive this.

Mr. SIMPSON. That is the one thing we found within the Department of Energy, is that they do unique things that are sometimes hard to do estimate the cost of because they have never been done before.

I appreciate your testimony. As the chairman said, it is interesting to get the background on this, but an awful lot of this discussion depends on the policy decisions that we ultimately have to make.

Chairman SPRATT. Thank you, Mr. Simpson.

Ms. MCCOLLUM.

Ms. MCCOLLUM. Thank you, Mr. Chair.

Gentlemen, we sit here today, and Congress and the new administration, as has been pointed out in other questions, must begin making smart decisions for best overall security strategy for the United States.

As the DOD working paper states, capabilities based on planning should be apportionate to the risks that are across the challenges. Now, it seems our current defense strategy focuses on spending on the least likely scenarios, according to the quad chart that was put up. Clearly, an example of this was the money that was spent on missile defense. And I am afraid that we are not focused enough on high-risk, high-vulnerable scenarios.

As we look to make the Pentagon more cost-efficient, one of the tools that we have in our national security strategy box is supporting the 3-D strategy: National security is defense, diplomacy, and development. And one of the things that I noticed that is missing on this quad chart is any discussion about how climate change—and we know that the Department of Defense is spending a lot of money with climate change scenarios out here.

So what are some of the potential cost savings to our national security spending by increasing funding for development and diplomacy? What kind of savings could we see, doing that?

Thank you, Mr. Chair.

Mr. DAGGETT. I put the quad chart up, so I guess I am on for that.

It is a hard question. As I said, Secretary Gates really has done a series of speeches recently in which he has raised a lot of precisely the kinds of questions that you have. Those of us who work in Washington, on defense policy in particular, discuss quite often very fundamentally different alternative approaches to national security; I mean, are there things you can do in prevention by building relations with allies that could then lead to reduced requirements over the long term for forces and so on. I mean, we talk academically about that all the time. They are now on the political agenda, and they are there because Secretary Gates has really put them on the political agenda. He is talking about a whole-of-government approach now to national security that involves all of the elements that you talked about. So, you know, it is a very lively discussion.

I think in the short term, his priority, as he has articulated it, has been to reduce the emphasis on what he calls traditional sys-

tems and increase the emphasis, as he puts it, on the wars we are fighting now, by which he means irregular conflicts. So he is more focused on the fairly short term, not on the kind of longer-term issue so much immediately that you talked about, but on the shorter term. And that does involve some potential shifts in priorities. And I look for DOD to be discussing them even in the 2010 budget, and particularly in future budgets.

But that, to me, is likely to mean tradeoffs in major weapons programs—are we going to continue to produce DDG-1000 Destroyer or not—transformational communications satellites, things of that sort, all of which support capabilities for traditional conflicts.

And in favor of what? He has been very focused on trying to find more resources for the immediate fight. Some of them are not necessarily low-tech. Some of those things are, certainly, UAVs and so on. But his argument has precisely been that we have not put sufficient resources into those areas.

So I think there is going to be a big debate about the allocation of resources, or there is likely to be a big debate about the allocation of resources. And I am not sure how it will play out.

I mean, you raised a much longer-term question. And I think there also certainly is a discussion in the government about allocation of resources between defense and nondefense. That gets way beyond what Mike and I work on, but it is a big part of the discussion.

DOD has been involved now—there have been some increases in what DOD is doing in typical areas of foreign affairs. If you leave aside military assistance, security assistance, and even economic assistance in foreign countries, if you leave aside, though, what DOD is doing in Iraq and Afghanistan, that is not, by DOD standards, a huge amount of money. Global train and equip has become a big focus of attention. DOD, last year, asked for authority for \$800 million, I think, for that. From the State Department's point of view, that is a lot of money. From the Department of Defense point of view, it isn't particularly.

The appropriators then have taken some issue with that. They think that that should be handled primarily by the State Department rather than by DOD. And I think that, again, is an issue for, in a sense, this committee to address, and Congress.

Ms. MCCOLLUM. Mr. Chair, I hope we have a chance to talk about those tradeoffs and balances later in the committee, especially as the reauthorization for State Department starts moving forward.

Chairman SPRATT. We will. Thank you very much.

Mrs. Lummis, from Wyoming.

Mrs. LUMMIS. Well, good morning. I appreciate very much your attendance today.

I would like to start with a very basic question about the Department of Defense and its inability to produce a clean audit. I am curious why that is, what obstacles you think prevent that from happening?

I support peace through strength. I support a robust, capable military. But I do find it interesting that earlier in this discussion we were talking about how military auditors are auditing con-

tracts, but why can't they, in turn, produce a clean audit of the Department of Defense? Any thoughts in that regard?

Mr. GILMORE. That is not an issue that CBO really looks at. You know, auditing is the forte of the Government Accountability Office.

I guess the only thing I would observe—and this is by no means to try and make an excuse for the problems in DOD bookkeeping—but I think we have seen that many large organizations have problems keeping their books and accounting for every dollar that is spent, no matter how hard they try to do that. And DOD is another large organization, so it is not surprising that they have those problems, which is not to say that they shouldn't continue very hard to try and eliminate all of them.

But that is not something that we have looked at specifically.

Mrs. LUMMIS. Thank you, Mr. Chairman.

My next question is perhaps more on point. One of the biggest tensions, I understand, that occurs in the budget process for DOD is the constant battle between funding current operations and long-term planning and acquisition.

So my question is this: Based on your analysis, do the budget numbers give us an indication of where DOD is focusing? Is it more focused towards replenishing what we have or spending money on what we think we might need in the future?

Mr. GILMORE. Well, I think that the base budget contains funding for both kinds of activities, although predominantly for systems in the future.

So if you look at the investment program, it is dominated by things like the Joint Strike Fighter program, the Littoral Combatant Ship program, the DDG-1000, other systems like that that are going to come online in the future.

But there are also requests in the base budget for billions of dollars' worth of procurement for what Steve and we at CBO refer to as minor equipment in the Army—ammunition, radios, other things like that—that are very important to current operations. And then, of course, there are also substantial amounts in the supplementals for those kinds of things.

So the short answer is, it is a mixture of both. The base budget is primarily focused on the future, not surprisingly, and the supplementals are primarily focused on funding current operations.

Mr. DAGGETT. Could I just make one point?

Secretary Gates, again, has raised precisely that issue in those terms. He made a speech a few months ago in which he argued that we need to focus less on the war we are not fighting and more on the war we are fighting now. And I think that is partly where concern about that kind of issue comes from.

You know, his argument is that a large part of investment has been in the direction of the systems for conflicts 20 or 30 years down the road at a time when we are having a problem, in his view, finding sufficient resources for some of the things he wanted to do in Iraq and Afghanistan. And that drove it.

It is not necessarily a big budget driver. The kinds of items he was talking about for Iraq and Afghanistan aren't necessarily going to drive the budget, in itself, much higher. But it is a matter of allocation. It is an issue in DOD.

Mrs. LUMMIS. Thank you.

And one more question, Mr. Chairman—and thank you very much for working so hard to pronounce my name right. I am struggling in both my own conference and with others to get it. And you got it right, so I deeply appreciate that.

My last question is about the Army National Guard or National Guardsmen and -women deployed in both Iraq and Afghanistan. And this is a subject that is very close to home with me because, in April, over 940 Guardsmen and -women from Wyoming will be deploying to Iraq in what will be the largest mobilization in history of Wyoming's Army National Guard.

So my question is, in terms of both manpower and machinery, in your opinion, have the DOD's budget numbers aligned with the increased burden on our National Guard around the country?

Mr. GILMORE. They are beginning to. There have been substantial amounts of funding requested in the supplementals and increased amounts in the base budget associated with equipping the National Guard units, for the reasons that Steve mentioned: The National Guard is now being used as an operational force, and, before Iraq, for the prior 20 or 30 years, it was not regarded that way. It was regarded as a strategic reserve, and equipment fill and personnel fill levels for the Guard were well short of those maintained for the active force—you know, 80 percent equipment fill versus 90 or 95 percent for the active force, for example. And the budgets in those years prior to operations in Iraq and Afghanistan reflected that difference, that difference in priorities.

But that has been changing. But I don't think the Department or the Army, in particular, would claim that they have filled all the shortfalls. And so there are still tens of billions of dollars' worth of shortfall that I am sure the Army would claim needs to be spent to fill those shortfalls.

Mr. DAGGETT. Could I add just one point? There is another policy issue here, and that is, it is clear that what the Army wants is for all forward-deployed units to have the most modern equipment. They want units that are training to deploy to train on the same kind of equipment. Then the question becomes, what about the next in line after them? Do they have to be equipped with everything the next-to-deploy unit has? And the answer is, well, no, but we need to think through what the mix is.

And then, for the fourth-to-deploy unit that is resetting, what kind of equipment levels do you need? And, you know, not every unit in the force is going to have all the most modern equipment all the time. The real policy issue for the Army that I think is still unresolved is, what are overall equipment requirements relative to our rotational policy?

And, again, that is why I think there is still a need for a look at what Army investment requirements are and what have been met and what needs to be met as yet. And that applies, as well, in particular to our Army National Guard.

Chairman SPRATT. Mr. Blumenauer.

Mr. BLUMENAUER. Thank you, Mr. Chairman.

I would like to shift just a little bit, thinking about some of the long-term obligations that the Department of Defense has, where

there is some potential significant savings, and if we don't do it right, it is going to cost us a lot of money.

The Department of Defense is the largest manager of infrastructure in the world, the largest consumer of energy. We have, what, 10 million to 40 million acres potentially contaminated from past military operations, training. Yet it seems that, year after year after year—and I fault the Congress more than the Department of Defense—that we are sort of missing in action, that we don't really put significant resources to helping the military clean up after itself.

I mean, ultimately, those munitions break down, the military chemicals get into the water supply. We spent I don't know how much in Massachusetts to protect the groundwater for Martha's Vineyard. Or something explodes, literally and figuratively. And so we throw a lot of money at Hawaii, but we find in front pages, just in the course of the last couple of weeks, that there is huge local resistance to expanding training facilities because we are not a very good steward, we are not a very good neighbor, people get stuck with stuff. I think in Sacramento it is going to be 2077 before the base that was closed in the first round of base closure is cleaned up and returned.

Now, it would seem to me that this has significance in terms of just military readiness, that we are kind of stupid in terms of how we use energy. We make it hard to have energy savings contracts that would pay for themselves. We are not developing the technology that would help the military determine whether it is a hubcap or a 105 shell. That doesn't just mean that it is hard to clean up in Colorado or Pennsylvania or Wyoming. Every State in the Union has unexploded ordnance problems. But it has implications for those people in Wyoming that are going to be shipped overseas because we haven't developed it.

Can you give me any sense of where you see indications with the development of future budgets going forward, that there is any indication that we are going to help the military save money by cleaning up after itself, help local communities avoid pollution and, frankly, explosions? Because three times since I have been in Congress we have had to pull firefighters out of national forests because the heat was exploding shells from prior training.

Do you have a sense of where we might be going in this, in terms of budget categorization and strategy?

Mr. DAGGETT. Just a couple of things.

I can't, by any means, give you an overall picture of where DOD is going on environmental issues. They spend a substantial amount of money each year on environmental clean-up and compliance. And there are budget figures, and I can provide you with the data on the trend.

I actually coauthored a report some years ago on trends in DOD environmental clean-up and compliance activities. DOD is subject to the same kinds of environmental compliance requirements as private industry is, really the Federal Government is.

Mr. BLUMENAUER. Theoretically. Not in practice.

Mr. DAGGETT. Let me speak to that point. And there have been a lot of debates about whether the investments that they are making in clean-up are sufficient.

On the compliance end, and especially on things like energy efficiency, DOD has done some looking at that lately, and they are not satisfied with what they have invested in energy efficiency.

It has a security component to it, actually. There was a Defense Science Board report done last year which discussed potential vulnerability of military facilities to loss of power from the public grid. And it affected potentially even mission-critical activities. So it is a really natural area, when you think about it, for DOD to look at.

So what is the solution to that? Well, part of the solution that the DSB discussed and that is being discussed much more extensively now inside the Defense Department as a whole is build green power production facilities for the base itself. Use wind power, use geothermal power if you have those kinds of things on the base.

And it is not just a matter of being green for the sake of being green. It is being green for the sake of security interests.

Mr. BLUMENAUER. Yeah. Well, I see my time has expired, but I would very much appreciate the report, the research that you are talking about.

Mr. Chairman, I think Mr. Daggett's last words are very important. This is not just being green for the sake of being green. It has operational implications for security of our bases in terms of energy, in terms of the safety of our personnel, to protect them from military toxins and unexploded ordnance, building the technology and saving money.

And because, Mr. Chairman, you wear two hats, both with Armed Services and with Budget, this is something that I would love to be able to pursue with you to make sure that we have the budget headroom but also we get the policies aligned.

Chairman SPRATT. Three hats. I represent a couple of bombing ranges, too.

Mr. Scott of Virginia.

Mr. SCOTT. Thank you, Mr. Chairman.

And I would like to follow through on that, because it has a specific interest in Virginia on BRAC closings.

Have the BRAC closing costs, including clean-up—I think you used the words “systematic underestimate of costs”—have the real costs of closing these bases, including clean-up, been appropriately projected?

Mr. DAGGETT. I can't speak to that. I just haven't looked at it closely enough. If you want, I will be glad to get back with you. We have looked at it some.

Mr. SCOTT. Okay. Let me just say that the Fort Monroe closing and the clean-up may be off in the hundreds of millions of dollars. And if the systematic underestimate is system-wide, you are talking about many billions of dollars.

Shipbuilding—under shipbuilding, I noticed you had significant acquisition costs there. What is our ship strength that we are projecting?

Mr. GILMORE. Well, currently, in 2009, the information we have is that we have a 288-ship fleet. And by 2013, that would grow to 295 ships. And by 2026, that would grow to 319 ships; 55 littoral combatant ships at that time. That would be the total buy that is currently planned, although there has been difficulty with that program, and it is being restructured. That included seven DDG-

1000s. This projection was based on the 2009 Future Years Defense Program that was put forward prior to the restructuring of the DDG-1000 program. That may reduce it to two or three ships.

Fifteen CG(X)s, seven CG-47s, 62 DDG-51s, 62 submarines, including 12 ballistic missile submarines, 44 amphibs, and 54 support ships, for a total of about 319 ships in 2026.

Mr. SCOTT. Did you say aircraft carriers?

Mr. GILMORE. Aircraft carriers are in there. I didn't mention them. But it was 11—

Mr. SCOTT. Well, I am from Newport News, if you want to mention those.

Mr. GILMORE. Eleven aircraft carriers. Sorry, that was an oversight.

Mr. SCOTT. Ship repair—is there a backlog on maintenance of ships?

Mr. GILMORE. We have not looked at that, so I can't say.

Mr. SCOTT. Because you may have another systematic "misunderestimate" on—

Mr. GILMORE. I don't know what current DOD budgeting programming practice is, but many years ago when I worked there the practice was to program in future years any year beyond the budget year for 80 percent of ship depot maintenance requirements versus funding at what the Navy thought the real requirement was in the budget year, which meant that, when those future years became budget years, you had to find an additional substantial amount of money to pay for what was really going to happen. But whether the Navy still programs in that manner, I don't know.

Mr. SCOTT. You mentioned the fact that the Defense budget kind of includes—you kind of have to think about the cost of veterans. You talk about veterans health care. Have we talked about the social services and other health care, like mental health, homelessness, unemployment, that we have systematically not addressed? Are we including those? Are we including business as usual on mental health, homelessness, and problems like that?

Mr. DAGGETT. We have both focused really just on the Department of Defense budget, not on the VA budget. You know, my view is, in order to cover the complete cost of personnel in particular, you do need to take a look at the VA budget.

Mr. SCOTT. On contractors, one of the problems of hiring contractors is you don't even know what law they are under, what chain of command they are under. I mean, you have problems like use of deadly force, and who makes those decisions. There are also financial complications, like they are actually competing for employees with the military. We train the guys on our dime, and if they hire them at a slightly higher pay grade, then we have to train and everything else.

In addition to the complications on policy, have you looked at the financial implications of the unprecedented level of contractors we are using now in the Defense budget?

Mr. DAGGETT. I have not.

Mr. GILMORE. We have just done the analysis that I discussed previously of what the contract costs have been in Iraq, and that would total \$85 billion to \$100 billion.

By the way, in the process of doing that work, we did interact with the Department and asked them whether the problem that you mentioned of people, for example, highly trained special operations personnel retiring and then being hired as contractors, what—

Mr. SCOTT. Well, deciding not to re-up because they can get—

Mr. GILMORE. Correct—whether that was, in their view, a problem, whether that was creating a problem for them. And they indicated it was not. And we have no independent way of checking to determine whether that is accurate, but they indicated it was not.

Mr. SCOTT. Thank you. Thank you, Mr. Chairman.

Chairman SPRATT. Mr. Scott. Mr. Larsen.

Mr. LARSEN. Thank you, Mr. Chairman. The Defense News February 2nd headline, “New Destroyer Emerges in U.S. Plans Options, Mulls as DDG-1000 Hits \$6 Billion.” I think your analysis still had it at merely \$4 billion. And so another headline in this is, “Presidential Helo Cost Growth Cracks Nunn-McCurdy ceiling.” That is for Marine One replacement. It cracks the Nunn-McCurdy ceiling. And then, of course Gates foresees U.S. cuts. Now, that is based on his testimony in the Senate Armed Services and the House Armed Services Committee. It just seems very difficult for me to understand that as much supplemental dollars we have provided to the Department of Defense, and I am a member of the House Armed Services Committee, so I have seen it all happen over the last 8 years, both given to them in supplemental and in base budgets that they are yet coming for even—asking for even more beyond what one projected increase is. And so I guess I would expect in Armed Services for us to be fairly tough over there.

But something that Secretary Gates testified to last week, and I wonder if you have thought through these in looking at your numbers, he listed seven or eight separate steps, general steps that he planned to take to squeeze down on acquisition costs, purchasing systems at 75 percent solution rather than 99 percent solution. We apparently are on—some programs are hitting stable rates for acquisition, freezing requirements on programs, and a few other things. Mr. Daggett and Mr. Gilmore, do either of you have some views on Secretary Gates’ thoughts on how to keep costs—ameliorate increases? I won’t say keep costs down. That seems impossible in the Department of Defense. Let us say ameliorate the cost increases. Mr. Daggett.

Mr. DAGGETT. Let me begin by saying CRS really doesn’t make recommendations on policy per se. We can assess the impact of alternatives though.

Mr. LARSEN. Assess away.

Mr. DAGGETT. When I look at what is driving the cost of major weapons programs, I look, first of all, at just the requirements process. And I use in the testimony, written testimony I use DDG-1000 as an example. If you look at it, it is designed to be a multi-mission system with pretty much maximum capability in most areas. The air defense radar is not quite missile defense radar, but short of that, it is as capable as any system you will have across the board, but just has so many missions. Well, what drove that? Well, it was driven by the internal requirements writing process in the Navy. And when you—and now, you know, I mention it not be-

cause I have a view on whether you should buy it or not, but it is in trouble because it costs so much because it is such a big ship and so much has been added to it.

So it, to me, is precisely the kind of example of a system that is a 95 percent solution or a 99 percent solution to a host of issues. And what Secretary Gates is saying is accept a 75 percent solution in areas where that will work. Well, first of all, you need some oversight in the acquisition in the requirements process to ensure that. I am not sure where that is at this point. But it is a matter for organization and senior leadership to use the requirements development process really as a way of doing these cost tradeoffs. What is the role of the joint requirements oversight council and so on. I would look very hard at that.

Another area you need to look at is are there some areas where you want maximum capability, others where you don't. For an air-to-air fighter, I can make an argument for having a very highly capable system with a view toward being in the service long down the road. For an airlift aircraft, I am not sure I need that, so why do you need the kind of acceleration requirements that you have in various systems. I think that is a matter for oversight.

Mr. LARSEN. As my time runs out, could I ask Mr. Gilmore to respond to that question.

Mr. GILMORE. Well, we don't make policy recommendations either, but I would simply observe what common sense tells you that the actions the Secretary is proposing to take should all help reduce cost. But I think the most important thing for the Department to do is to be realistic in its initial estimates for the costs of these systems, whatever it thinks the requirements for the systems ought to be. And when it comes to, for example, the DDG-1000, we still think on the basis of past experience that that ship will cost between 4 and \$5 billion. The \$6 billion number, I think, includes some of the development cost, but I don't know for sure. I have read the article, but I haven't seen the details behind it. And the comparable number from the Navy previously was 3 to \$4 billion, more like 3½.

Originally, when it was the surface combatant of the 21st century, the SC 21 program, the fourth ship in the class was supposed to cost in today's dollars, \$1.5 billion. Now, if you looked at the cost of that ship on a cost per ton of light ship displacement, you know the ship without any fuel or crew or anything else, that would have made it the cheapest surface combatant ever built, substantially cheaper than the DDG-51.

So there were a lot of people in the building, I was in the building at the time, who knew that that initial estimate was unrealistic. So I would say that when you have initial cost estimates for systems like that, no program manager in the world is going to be able to manage the program in such a way that the costs will not grow. And it is not really so much cost growth as cost realism setting in. When you actually have to design the system and build it, it always ends up costing more than these initial very optimistic estimates where people sit down and think, well, if we did this differently and this differently and this differently, it will save substantial costs. Unfortunately history tells us that the problems that

were experienced in the past may not occur, but different problems will occur and the optimism isn't warranted.

And so a lot of what I think people characterize, and, in fact, I characterized in the charts I showed you as cost growth, really isn't cost growth so much as it is cost realism. It is reality setting in. And if you want to avoid having that problem, you need to have realistic initial estimates of the costs which the Department doesn't have in many instances.

Mr. LARSEN. Thank you.

Chairman SPRATT. Mr. Yarmuth.

Mr. YARMUTH. Thank you, Mr. Chairman. Thanks to both of you for your testimony. On the question of the percentage of the GDP, that Defense Department budget constitutes, what kind of growth rate are you projecting in GDP over this term at the same time.

Mr. GILMORE. It was a little over a couple of percent real growth long-term.

Mr. YARMUTH. Some people might take solace from the standpoint that even with these projected increases in absolute cost that the percentage of growth—percentage of GDP does not grow, in fact, declines. But would you be familiar with what other costs, governmental costs would be rising out of the same time, because Defense is competing with obviously every other portion of the budget. So if say Medicare, Social Security, all the other cost sectors are increasing at a much higher rate, and I assume they would be.

Mr. GILMORE. They are. CBO has done a number of projections of the long-term cost of those entitlement programs and over the long-run Social Security as a share of GDP will rise several percentage points. And the cost of paying for Medicare and Medicaid and other programs like that will rise by tens of percentage points. That is really the bigger problem areas; the future health care costs associated with those programs. But I would observe that you could set the defense budget at zero dollars and it would not materially affect the problem that the overall Federal budget faces in paying for Social Security and Medicaid, which is not to say that anyone who is reasonable doesn't think that because defense currently composes over half of domestic discretionary spending, that it isn't going to be under pressure. It obviously will be. And if you look at the long-term trend for overall Federal spending as a share of GDP and its components, what you see is that defense basically has been the bill payer. Its share of GDP has declined as the share of GDP associated with these entitlement programs has grown.

Mr. YARMUTH. On that question, what would be comparable numbers of other industrialized nations in the world? What is the range that you would say it would spend of GDP.

Mr. GILMORE. We are at 4½ percent of GDP. The Japanese are 2 percent or less.

Mr. DAGGETT. Under 1.

Mr. GILMORE. All the other countries in the world are much, much less, much less.

Mr. YARMUTH. Mr. Simpson raised the issue of the health care costs and the growth rate that is projected and tried to make a connection between that and some kind of argument for or against universal health care. I suspect that one of the reasons that the

growth rate in medical in Defense Department health care relates to factors that aren't present in the general population. Is that true? The nature of the injuries, the length of care that is going to be required because of many of the injuries concerned, you don't think those are factors, or would they be?

Mr. GILMORE. Actually, those factors would apply more to the Department of Veterans Affairs health care costs because of the veterans who suffer those kinds of injuries and require long-term care. And there are obviously horrible injuries that occur, although thankfully, a relatively small number of people deployed who have suffered those injuries. But nonetheless those are costs that end up being borne by the Department of Veterans Affairs. Our projections for medical care costs from the Department of Defense are based upon the practices that the Department of Defense currently uses. And we did not speculate in the future in doing our projection about how the Defense Department might change its practices; you know, employing more health information technology and so forth and so on.

So our current projections don't incorporate any savings from those kinds of practices because those are not, literally speaking, part of the current plan, which is not to say they may not be realized, but this is a projection of current policy not how it might change in the future.

Mr. YARMUTH. One quick question before my time expires. So we are dealing primarily with TRICARE here. TRICARE employs a number of private insurers to administer the program, so in fact, it is really not fair to say that the TRICARE system is a single payer system as is often talked about with regard to the Federal Government.

Mr. GILMORE. That is correct.

Mr. YARMUTH. Thank you very much. Thank you, Mr. Chairman.
Chairman SPRATT. Ms. Kaptur.

Ms. KAPTUR. Thank you, Mr. Chairman, very much. Gentlemen, you have had a long morning and we thank you very much for your work. I wanted to go to Mr. Daggett and say that in your testimony on page 4, you touch on a subject I am very interested in. And that is the rising cost per average military service member. You state about it is 45 percent more expensive today than it would be 10 years ago. And that does not include the cost of medical costs. And nor retirees. Nor does it include benefits that are not part of the national defense budget. I am interested in your discussing that a little bit more. Does this have anything to do with the rising costs of recruitment bonuses and retention, and could you discuss that a little bit please? And the nature of that cost versus when we had a conscripted force as opposed to a volunteer force?

Mr. DAGGETT. In these figures I just tracked cash income of personnel and deferred benefits, retirement benefits. I did not track noncash compensation, which is in the operation and maintenance accounts. And that includes medical care, family services, dependent education, commissaries, nor did I track family housing. So it is really just focused on the military personnel accounts. That is the kind of a technical answer. So it is only part of the compensation package, although it is the biggest share of the compensation package. I also did not track Veterans Administration benefits, ei-

ther disability pensions or health care or any other aspect of VA educational benefits, again just because it is outside the Department of Defense. So what this tracks really is what has been happening in the DOD military personnel accounts in pay and benefits of military personnel. It does include retirement benefits in the sense that the accrual costs of military retirement are covered here.

The DOD pays into the military retirement fund an actuarially determined amount for future retirement benefits for current personnel. And that is included here. That is part of the cost. And that has been increasing dramatically. But it has increased dramatically because of two programs; TRICARE For Life and concurrent receipt of military retired pay and VA disability benefits. Otherwise, it is increased just with basic pay. So what is driving it up? Lots of different things; increases in basic pay, increases in basic allowance for housing, bonuses. Retention bonuses are part of it, but that is not a big part of the overall account. Those have increased substantially in percentage terms, but they are not a big part, a huge part of the overall budget.

Ms. KAPTUR. So what is in that? Because when you look at the number of personnel, obviously your disbursements for personnel are your largest expenditure.

Mr. DAGGETT. Look at page 3, which is on the next page. Page 6 actually. And that is just a bar graph that shows the major elements of the part of the compensation package I am looking at. So it includes basic pay subsistence and separation pay. The bulk of that is just day-to-day paychecks. The basic allowance for housing, people often miss how large a share of military compensation that is, and that is actually a part of take-home pay. And that has increased dramatically over time.

Ms. KAPTUR. Does this reflect a rental of the housing off base or the on base contracted-out housing situation? Why is that number going up?

Mr. DAGGETT. Well, basic allowance for housing is given to personnel in their paychecks to pay for housing themselves. This does not track the part of military compensation that is for family housing for on base facilities. That is a different account. What I am tracking here is really the trend in cash income of military personnel.

Ms. KAPTUR. If I were to ask you the question since we had the draft versus today, and you look at this cross cut, can one make any judgments about how the current system is different or more expensive than when we had the draft?

Mr. DAGGETT. I haven't specifically done those numbers. But suffice it to say, personnel are much more expensive on average now than draftees were. But then typically the draftees were in for a limited period of time. They were not part of the professional military. And the draftees were a larger part of the military, a very large part of the military force. The uniform force was actually the smaller part of it. They were paid at higher rates more comparable to this. But again, the bulk of the force being drafted, they were paid at much lower rates and were in for a shorter period of time. I don't know if that is responsive. But I can give you the numbers on it.

Ms. KAPTUR. I would like two pieces of information for the record, Mr. Chairman, if I might. My time is expired. Mr. Daggett, if you could provide the figure on, though you said it was small, the actual amount of reenlistment bonuses, bonus payments to retain and attract individuals to go into the military now versus 10 years ago. That would be very—it is billions of dollars. I would just like to see that. And then Mr. Gilmore, I would be very interested if you could provide for the record of the Federal deficit, the accumulated deficit in the last 10 years where we have had to borrow to cover that, how would one look at defense spending, and the war in particular, as a segment of that.

Mr. GILMORE. That is something that the organization doesn't do, which is ascribe a particular part of defense spending to the deficit. We typically don't do that.

Ms. KAPTUR. You don't do that. Does the CBO do that? Excuse me, CRS do that?

Mr. DAGGETT. No.

Ms. KAPTUR. You don't do that either? That is interesting. Who does do that?

Mr. GILMORE. Well, we don't do it because we think there are good reasons not to do it, that you can't identify a particular dollar spent and say that is a deficit dollar versus another dollar that is not a deficit dollar.

Ms. KAPTUR. Well, there is over \$850 billion that has been spent; \$864 billion on the war funding has all been borrowed, so it can't be that hard a calculation. I thought there would be a chart on it or something.

Mr. GILMORE. You can make a distinction like that, but it is not something the organization argues is a correct thing to do.

Ms. KAPTUR. All right. Thank you very much.

Mr. DAGGETT. If you ask, we will be glad to take a cut at it. I mean, we respond to any of those.

Ms. KAPTUR. I would be very grateful for how you might arrange that mathematically. Thank you.

Chairman SPRATT. Mr. Etheridge.

Mr. ETHERIDGE. Thank you, Mr. Chairman. Thank you for holding this meeting. Thank you gentlemen for staying, and I appreciate your presentation. Let me ask a question a little different way because I represent Fort Bragg in North Carolina, and also have the privilege of having the headquarters of the 30th heavy brigade that has been pulled up as an Old Hickory Unit pulled to Iraq and now getting ready to come back again. So thousands of brave men and women who are stationed in those areas and many who served multiple tours in Afghanistan and Iraq.

But my question is a little different in that the new administration is now considering plans to substantially increase troop levels in Afghanistan. My question is, does future war cost projections that we saw, and you talked about them in some detail, do the charts and graphs and numbers give us any help in looking at future projections by the CBO as you put these numbers out? Do they take any kind of probable increase in the accounts or adjustments given this administrative change?

Mr. GILMORE. The projections I showed you, which over the next few years, assume that troop levels decline from, in the total Iraq

theater from 180 or 190,000 troops in Iraq and then another 30,000 or so in Afghan, that the total number deployed declined to 75,000.

Mr. ETHERIDGE. So you were using the 75,000 figure as the number?

Mr. GILMORE. Yeah. That rampdown does not—we had to make an assumption so we just assumed. We had a beginning point which is the current size of the deployments in Iraq, the Iraq theater and Afghanistan, and then we had a somewhat arbitrarily chosen end point, 75,000, and we just linearly ramped it down over 3 or 4 years. That obviously does not account for how the detailed deployments might evolve over the next year or two. It certainly could end up being consistent with what happens. If there is a draw down in Iraq that proceeds at a more rapid pace, or is more substantial, larger than the increase in forces in Afghanistan, that somewhat arbitrary assumption could turn out to be roughly consistent with what happens, but that is not the way it was designed.

Mr. ETHERIDGE. Let me follow that because I hear from our men and women quite frequently, and you touched on it earlier on the reset cost. And we talk about a reset cost, but also you got that training piece if you don't have the equipment to train with, and we have been through this a number of times. Is that in the projections as well of getting equipment up to speed, because when we come home, we are assuming that it will wind up in Afghanistan? You got a little different environment in Afghanistan than you do in Iraq in the sands. It is still a tough environment. Is that included in these projections?

Mr. GILMORE. The short answer is yes. We include in our projection an estimate of what it will cost to "reset the equipment based on what our experience has been over the last year or so." So to the extent that that experience is a good predictor of the future we have accounted for it well. But there are many details of those costs that, notwithstanding our report of a year and a half ago, we still don't understand.

So I am not going to sit here and say that I think that that projection is a real prediction of the future, but it is based on our experience in reset costs over the last year or so.

Mr. ETHERIDGE. One other point, and then I will yield back, Mr. Chairman. Because you touched on it and I had a note here on the health care costs that you responded earlier to two questions. Having had the opportunity to spend some time in the military, the days when the draft was active with a lot of my friends and neighbors. The health care issue that was raised in the current environment we find ourselves in with an all-volunteer army, we really have a much younger force if you look from top to bottom than you would have in the general public at large, even with TRICARE, because you have got a selected force by and large that is fairly active, accustomed to staying physically fit by and large more so than the public at large.

Mr. DAGGETT. But under 65 retirees do get access to the military.

Mr. ETHERIDGE. No, I understand that. But by and large, they normally would be a more physically fit group of people I would think.

Mr. GILMORE. You are obviously correct that the enlisted force which composes the bulk of the force is going to be younger than

the population as a whole, yes. Although as I mentioned before, we haven't really looked at the effect that the somewhat different demographics may have.

Mr. ETHERIDGE. That would be interesting to know as we go through this, not to call attention to either one, but show what happens if a person stays physically fit, what happens in life. I think we know the answer, but it sure would be good to quantify. Thank you, Mr. Chairman. I yield back.

Chairman SPRATT. Thank you, Mr. Etheridge. Just quickly one question before we turn to Mr. Langevin. Do you have a rule of thumb at CRS or CBO for what it costs to move a division or a brigade with full equipment sent back to the States from Iraq?

Mr. GILMORE. No, I can't give you a number off the top of my head. But I can say that my recollection is in the past we have tried to estimate those transportation costs. And I am not going to claim that they are small in absolute terms, but as a percentage of the operations and maintenance bill, the total operations and maintenance bill that accrues every year which is probably 80 percent of that \$180 billion or so, it is a small fraction of that.

Mr. DAGGETT. We have tried to defer to CBO on cost estimates on forces abroad, on deployments abroad.

Chairman SPRATT. Could you submit, for the record, your growth estimation that—your rule of thumb for, division set, brigade set, whatever the proper unit is?

Mr. GILMORE. I would say brigade set would probably be it.

Chairman SPRATT. You are able to caveat it for. Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman. And gentlemen, I want to thank you for your patience and your testimony here today and for what you do to make sure that we stay informed with good information. I sit on not only the Budget Committee, but also the House Armed Services Committee. And following the debate on the issue of the DDG-1000 versus the 51 that is going on right now, and just for my own knowledge and clarification for the record, when you talk about the range of potential costs, whether it is 4 or 5 to \$6 billion for the DDG-1000, I would assume that you are talking about the first ship, which obviously is the most expensive and then costs moderate over time as you achieve economies of scale. Can you clarify that for the record?

And also talk about your analysis on start-up costs if we were to start the DDG-51 line. And you estimate real costs of what that would be, what that ship would be per copy now with the add on technologies. And also the tradeoffs versus going with the DDG-1000 and the fact that these aren't supposed to be incorporating follow-on or transformational technologies that would, at a later point, be used on the cruiser or other platforms. So that it is kind of you can't just talk about the 51 in a vacuum, you know, they have other follow-on technologies that would be applied to other platforms and would be of course useful as the cruisers is developed. So if you could just kind of talk about those for a few minutes.

Mr. GILMORE. Well, the cost numbers that I quoted of 4 to \$5 billion were, for the first ship, exclusive of the—so it excluded the development costs, the design costs for the ship, the cost of building the first ship. And then, yes, we do assume in our estimate that

subsequent costs, subsequent ships costs less. That there is a learning effect that occurs.

Mr. LANGEVIN. So can you estimate what the following costs would be?

Mr. GILMORE. I don't know off the top of my head, but I can certainly provide them to you.

Mr. LANGEVIN. That would be helpful.

Mr. GILMORE. And as far as the start-up costs and the new ship costs for new versions of the DDG-51 are concerned, that is not something at which we have looked. And I would have to take a look at what the Department is claiming before I could actually decide whether we have enough information to do a cost estimate at this point. I don't know if there is sufficient information available from the Department of what it would actually put in new DDG-51s to do a definitive estimate.

Mr. LANGEVIN. They are making what they claim to be definitive estimates. So I think it would be helpful if you would look at that and get back to us for the record.

Mr. GILMORE. All right.

Mr. LANGEVIN. And then have you looked at—this is the last part of my question—the value of the fact that the kind of technologies that the 51 would be incorporated—the DDG-1000 would be incorporated and would be used on other platforms, and particularly for the cruiser.

Mr. GILMORE. I don't mean to sound obtuse, and I probably will. I really don't know how to measure that value quantitatively. I certainly would admit that it exists. What analysis I could do that would generate numbers that would measure that value I fall short trying to think of. So I am not certain—in fact, I am fairly certain that I couldn't give you a—provide you with an analysis and a quantitative result that would measure that value. I think that that is a matter of judgment on the part of people in the Congress and people in the Department of Defense as to whether they think whatever costs will accrue to implement those new technologies is worth it.

Mr. LANGEVIN. Let me go back. Mr. Daggett, do you have a comment to that?

Mr. DAGGETT. No.

Mr. LANGEVIN. Let me go back to a line of questioning that my colleague, Ms. McCollum, was asking. Obviously the country is facing an economic and fiscal crisis right now. And with the Department of Defense spending, we obviously need to do the job of keeping the country safe, but spend our dollars more wisely. Just as the QDR helps inform the FYDP, isn't it more important than ever right now that we look at security from a more global perspective. There are those who would argue that we need to do a better job at using our soft par assets, incorporating that in an overall national security strategy as opposed to just looking at it myopically from the point of view of the Defense Department.

And so that something that I have thought about and have introduced legislation to that effect of calling for a Quadrennial National Security Review that would be done that would, I believe, better inform the QDR which would better inform the FYDP and overall defense policy and strategy, and would obviously make sure

that we are spending our dollars in the best way most effective way possible. Can you talk about that?

Mr. DAGGETT. A couple of points. A lot of organizations lately have been looking at improved interagency cooperation in National Security Affairs. There has been discussion of doing an overall national security strategy statement with guide budgeting for DOD as well as for other agencies for security purposes. We will see if this administration will propose that. It could be part of consideration of legislative measures as well if there are proposals to strengthen the inner agency. At the center of some of the proposals are—by the way, you will find some of the strongest advocates of this in DOD. Not just Secretary Gates, but other military commanders who have been involved in Iraq and elsewhere who argue that the whole interagency system needs to be bolstered across the board for prevention, but also for stability operations once they are involved overseas.

A big focus of attention is on how do you build teams to work on national security issues like proliferation which cuts across agencies. It is a State Department issue, it is a DOD issue, it is a Department of Energy issue, it could be a Treasury issue to track funding flows. We are not very good or as good as we could be probably at building—we do build teams at the Assistant Secretary level to discuss policy issues, but at the implementation level, we don't do that on a regular basis. Or it doesn't work as well as it could because DOD is such a big agency it comes in and everybody defers to them. How do you build those kinds of structures across the board. That is a very big matter of discussion. And we have been looking at that a little bit. There is a whole commission that did a recent study on it that has a number of direct recommendations for team building. So absolutely a huge issue on the agenda.

Mr. GILMORE. I think that the arguments in favor of a Quadrennial National Strategy Review, those arguments in principle are sound and they certainly make sense. I participated in the 1997 Quadrennial Defense Review and in the 2001 Quadrennial Defense Review, when I worked at the Pentagon. And I observed the last Quadrennial Defense Review from my position as CBO. And I would observe the following. If you look at the reviews which went from lasting 3 or 4 months in 1997 to over a year in the most recent version, and if you look at then what changes were actually made in the program, defense program subsequent to the reviews, you find that virtually nothing changed.

So in principle, I understand all the arguments in favor of these reviews. In practice, what I have seen happen is the reviews extend in length, expand in scope and have lesser impact or—it probably wouldn't be fair to say lesser, but not what I would characterize as significant effect on the actual defense program measured by what changed, what did I actually change in the program as a result of the review. And I would say probably not much in almost every instance. So going forward, if we can find a different way to do these reviews, perhaps it can be more successful in taking strategy and connecting them to the Future Years Defense Program and to spending in other departments.

But when I look at the record, I haven't really seen that happen. And I measure that according to what are the differences between the program that existed before the review and after the review.

Now, in principle, there could be good reasons why not much of anything changed. But all the arguments I have heard in favor of things like the Quadrennial National Strategy Review are, there are all these problems that we have left unaddressed, and the only way to address them is to have a broader scope more encompassing review. And when you look at what has happened in the past, not much has changed. And if not much has changed, then it would indicate to me that all these problems that people have identified haven't been addressed.

Mr. LANGEVIN. Like to go on, but I see my time has expired. Thank you for your input. If you have ways to suggest that we could change that to make those reviews more effective, I know I would be open to hear those thoughts. Thank you.

Chairman SPRATT. That concludes the hearing. I want to thank you once again for your excellent testimony. I think it speaks volumes about defense, but also about the value of analysis that we have valuable in CBO and CRS. Thank you very much indeed for coming in. Thank you for the effort you put in to make this hearing a useful venture. I also ask unanimous consent that members who did not have the opportunity to ask questions be given 7 days to submit questions for the record. Once again thank you for coming. [Questions for the record and their responses follow:]

QUESTIONS FOR THE RECORD SUBMITTED BY HON. STEVE AUSTRIA, A
REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

1. The successful completion of the most recent round of BRAC and military R&D are both very important to central Ohio. Can you tell me by service, whether BRAC is currently projected to achieve the savings that were envisioned? If the savings aren't realized, has DOD indicated how they will respond?

2. I would like to discuss two Air Force programs—the F-22 and the Joint Strike Fighter (JSF). What is the status of these two systems? How can we get DOD to do realistic budgeting?

QUESTIONS FOR THE RECORD SUBMITTED BY HON. ROSA L. DELAURO, A
REPRESENTATIVE IN CONGRESS FROM THE STATE OF CONNECTICUT

1. As you are likely aware, the Navy recently declared a so-called Nunn-McCurdy violation for the VH-71 presidential helicopter replacement program. Last year, the Defense Department announced that the total acquisition costs for the program were projected to increase from \$6.5 billion to \$11.2 billion. Now, merely two years after submitting initial baseline estimates, the Navy is confirming that the cost per helicopter will be at least 50 percent higher than the original estimate.

In recent testimony, Secretary Gates identified acquisitions as a chief challenge facing the Defense Department and specifically mentioned the VH-71 as a "big ticket" item experiencing contract or program performance problems, suggesting that "the FY 2010 budget must make hard choices." As we examine cost growth in Defense programs, how do you think we should approach big contract issues such as this one? What policies are needed to control such egregious cost over-runs? On the VH-71 program in particular, with the modifications and the new requirements being as extensive as they are, and the fact that had these changes been clear from the outset competing firms would likely have submitted different proposals, do you think a re-competition of Increment II of the program is worthwhile to identify whether this helicopter can be made at a better value to the taxpayer?

2. As with the controversial original award for the Air Force KC-X aerial refueling tanker contract, the Marine One contract was awarded to a consortium that involved a substantial amount of work being outsourced overseas. I believe such outsourcing of defense contracts runs against both U.S. national security and economic interests, eroding our defense industrial base, costing jobs and stunting economic

growth. Do you believe, particularly in these very difficult economic times, that the Defense Department should consider adjusting its methodology to account for potential job creation and economic growth when considering proposals for major projects such as the KC-X and VH-71?

MR. DAGGETT'S RESPONSES TO QUESTIONS FOR THE RECORD

SUBJECT: TRENDS IN DOD REENLISTMENT BONUSES AND OTHER SPECIAL PAYS AND ALLOWANCES

This is in response to your request, in a question at a House Budget Committee hearing on February 4, for information on amounts the Defense Department has spent for enlistment and reenlistment bonuses. CRS testimony for the hearing shows that compensation of an average active duty service member increased by 45% above inflation between FY1998 and FY2009. Your question is how much of that increase can be attributed to bonuses intended to aid in recruiting and retaining personnel at a time when the military services were concerned about potential shortfalls in meeting personnel goals.

A graph prepared for the testimony shows funding per active duty service member in FY1998 and FY2009 in constant, inflation-adjusted dollars, broken down into various categories within DOD's Military Personnel budget accounts.¹ One of the categories is "Incentive Pays, Special Pays, and Allowances." Funding for enlistment and reenlistment bonuses are included in subaccounts for "Special Pays." As Figure 1 shows, overall funding for "Incentive Pays, Special Pays, and Allowances" per active duty service member grew from \$3,387 per troop in FY1998 to \$4,976 per troop in FY2009. This is an increase of 47% above inflation, which about in line with the growth in overall personnel funding.

Table 1 shows funding for enlistment and reenlistment bonuses within the "Special Pays" subaccounts of each of the military services. It provides the amounts in current year dollars and in constant FY2009 dollars and then shows the total in constant FY2009 dollars per active duty service member for comparison to the amounts shown in Figure 1. In all, after adjusting for inflation, funding for reenlistment bonuses grew from \$229 per service member in FY1998 to \$796 in FY2009, an increase of 248%, and for enlistment bonuses from \$207 per service member in FY1998 to \$371 in FY2009, an increase of 79%. While these are large increases proportionally, enlistment and reenlistment bonuses represent less than 1.5% of cash compensation in FY2009. As a result, the increases are not a major factor explaining the overall growth of personnel costs.

TABLE 1.—FUNDING FOR ENLISTMENT AND REENLISTMENT BONUSES, FY1998 AND FY2009
[Current year and constant FY2009 dollars]

	FY1998			FY2009		
	Officer	Enlisted	Total	Officer	Enlisted	Total
Current Year Dollars (000s):						
Army:						
Reenlistment Bonus	0	50,650	50,650	0	339,030	339,030
Enlistment Bonus	0	58,223	58,223	0	314,861	314,861
Navy:						
Reenlistment Bonus	0	140,359	140,359	0	359,600	359,600
Enlistment Bonus	0	144,761	144,761	0	108,797	108,797
Marine Corps:						
Reenlistment Bonus	0	18,850	18,850	0	213,685	213,685
Enlistment Bonus	0	2,750	2,750	0	70,803	70,803
Air Force:						
Reenlistment Bonus	0	36,431	36,431	0	176,333	176,333
Enlistment Bonus	0	16,966	16,966	0	12,986	12,986
Total:						
Reenlistment Bonus	0	246,290	246,290	0	1,088,648	1,088,648
Enlistment Bonus	0	222,700	222,700	0	507,447	507,447

¹The data reflect amounts provided in the DOD base budget for each year, not including war-related funding provided in "bridge funds" or in supplemental appropriations. The data are in constant FY2009 dollars—the FY1998 amounts are adjusted to reflect inflation.

TABLE 1.—FUNDING FOR ENLISTMENT AND REENLISTMENT BONUSES, FY1998 AND FY2009—
Continued
[Current year and constant FY2009 dollars]

	FY1998			FY2009		
	Officer	Enlisted	Total	Officer	Enlisted	Total
Constant FY2009 Dollars (000s):						
Army:						
Reenlistment Bonus	0	66,124	66,124	0	339,030	339,030
Enlistment Bonus	0	76,011	76,011	0	314,861	314,861
Navy:						
Reenlistment Bonus	0	183,240	183,240	0	359,600	359,600
Enlistment Bonus	0	188,987	188,987	0	108,797	108,797
Marine Corps:						
Reenlistment Bonus	0	24,609	24,609	0	213,685	213,685
Enlistment Bonus	0	3,590	3,590	0	70,803	70,803
Air Force:						
Reenlistment Bonus	0	47,561	47,561	0	176,333	176,333
Enlistment Bonus	0	22,149	22,149	0	12,986	12,986
Total:						
Reenlistment Bonus	0	321,534	321,534	0	1,088,648	1,088,648
Enlistment Bonus	0	290,737	290,737	0	507,447	507,447
Constant FY2009 Dollars per Active Duty Service Member:						
Total:						
Reenlistment Bonus	0	229	229	0	796	796
Enlistment Bonus	0	207	207	0	371	371

Source: CRS based on data in military service Military Personnel budget justification books—FY1998 amounts are actual amounts reported in FY2000 justification books, FY2009 amounts reflect the original base budget request.

SUBJECT: SHARE OF CUMULATIVE FEDERAL BUDGET DEFICITS DUE TO DEFENSE
SPENDING

This is in response to your request, in a question at a House Budget Committee hearing on February 4, for an estimate of the share of cumulative federal budget deficits attributable to defense spending. For a number of reasons, any answer to the question is problematic and may well raise objections on several grounds. This response, therefore, should not be taken as a definitive answer to your question, but, rather, as one illustrative approach to the issue.

The conceptual difficulty of the question lies in the fact that deficits are, by definition, a result of an imbalance between spending on the one hand and revenues on the other, and it is very difficult to assign responsibility to one or the other. Deficits may grow from year to year either because spending increases, compared to some baseline, or because revenues decline, again relative to some baseline. But it is not clear what baseline to use in either case. It is certainly possible to calculate changes in spending or in revenues from year to year due to changes to standing law—i.e., to apply something like the baseline estimates calculated by the Congressional Budget Office (CBO) and the Office of Management and Budget (OMB). But then the problem is how many years ahead to continue attributing deficits either to changes in spending or to changes in revenues at one point in time. The issue is further complicated by the fact that both revenues and spending are affected by the state of the economy. Should, then, an economic downturn be held more responsible for deficits than changes in policy?

Rather than try to unpack these issues, this memo approaches the question, not by calculating what changes in spending and revenues cause deficits, but, rather, by determining what proportion of deficits have financed defense compared to non-defense spending. Specifically, it calculates the national defense percentage of annual federal budget outlays and then attributes an equal percentage of annual deficits to defense. The defense share of cumulative deficits, then, equals the sum of defense-attributable annual deficits compared to total deficits (less surpluses) over the chosen period of time.

Table 1 at the end of this memo, follows this approach for each year from FY1947 through FY2007. FY1947 was chosen as a starting point since it marked the first year of post-World War II outlays. Outlays in FY1946 still included a very large amount of money appropriated for the war, including funding carried over from prior years. They also included funding to return forces home and to close down weapons production lines. FY2007 was chosen as an end-point because it is the lat-

est year for which actual data on Budget Function 050 outlays are currently available.

Please note that the table calculates the defense share of cumulative deficits over the FY1947-FY2007 period rather than the defense share of the national debt owed to the public. For purposes of comparison, the table also shows the debt owed to the public at the end of each year in the final column. Annual changes in debt owed to the public correlate only quite roughly with annual deficits or surpluses, since off-budget borrowing is also reflected in the amount of the debt.

While this approach avoids some of the conceptual difficulties discussed earlier, it does not resolve them, and it raises some additional ones. One issue is whether it is appropriate to equate the share of deficits used to finance defense spending with the annual defense share of total federal outlays or whether, instead, annual increases in spending should be seen as financed by deficits. This issue is particularly acute with regard to supplemental appropriations. In years when supplemental appropriations were used to finance military operations, for example, without offsetting cuts in other spending or increases in revenues, one could very reasonably argue that the whole amount of war-related supplemental funding should be seen as an addition to the budget and therefore as responsible for an equal amount of the deficit (or for all of the deficit if the deficit is less than total war-related funding). If so, the cumulative share of deficits attributable to defense might appear significantly higher.

Another issue is whether it would be better to assume that the debt owed to the public is amortized over a period of time—over 30 years, or so, for example—so that the burden of earlier deficits are progressively erased from the books. If that approach were taken, the current defense-related share of cumulative deficits would appear smaller in recent years because defense has declined as a share of federal outlays.

Another alternative would involve assigning federal outlays for net interest on the debt differently. Table 1, in effect, treats interest on the debt as an element of total outlays, rather than allocating it in proportion to the defense or non-defense shares of cumulative deficits. If a share of net interest were attributed to defense, the defense share of cumulative deficits might appear somewhat larger.

Table 1 follows. In brief, it shows that defense outlays in the post-World War II era declined as a share of Federal spending from a peak of almost 70% of the budget during the Korean War to a low of 16% in FY1999 and increased after that to about 20% in FY2007. Accordingly, the share of cumulative deficits that can be said to have financed defense spending has also declined. Between FY1947 and FY1959, the cumulative budgets showed a surplus. The cumulative share of defense spending that might be said to be financed with deficits has declined from 53% in FY1959, the first year of net cumulative deficits in post-World War II budgets; to 23% in FY2007.

If CRS can be of any further assistance, please contact Stephen Daggett at the phone number shown above.

TABLE 1.—SHARE OF CUMULATIVE DEFICITS FROM FY1947–FY2007 USED TO FINANCE DEFENSE OUTLAYS AS SHARE OF TOTAL FEDERAL OUTLAYS

(Amounts in millions of current year dollars)

Fiscal year	National Defense Outlays	Total Federal Outlays	National Defense Percentage of Total Outlays (2)/(3)	Annual Surplus/Deficit	Defense-Related Share of Annual Surplus/Deficit (3)/(4)	Cumulative Surpluses/Deficits	Defense-Related Share of Cumulative Deficits	Defense-Related Percentage of Cumulative Deficits (7)/(6)	Note: Debt Owed to the Public
1947	12,808	34,496	37.10%	4,018	1,492	4,018			202,467
1948	9,105	29,764	30.60%	11,796	3,608	15,814			194,904
1949	13,150	38,835	33.90%	580	196	16,394			194,979
1950	13,724	42,562	32.20%	-3,119	-1,006	13,275			200,692
1951	23,566	45,514	51.80%	6,102	3,159	19,377			191,344
1952	46,089	67,686	68.10%	-1,519	-1,034	17,858			191,852
1953	52,802	76,101	69.40%	-6,493	-4,505	11,365			193,637
1954	49,266	70,855	69.50%	-1,154	-802	10,211			199,462
1955	42,729	68,444	62.40%	-2,993	-1,869	7,218			203,009
1956	42,523	70,640	60.20%	3,947	2,376	11,165			198,398
1957	45,430	76,578	59.30%	3,412	2,024	14,577			196,285
1958	46,815	82,405	56.80%	-2,769	-1,573	11,808			200,898
1959	49,015	92,098	53.20%	-12,849	-6,838	-1,041	-554	53.20%	208,657
1960	48,130	92,191	52.20%	301	157	-740	-397	53.60%	210,317
1961	49,601	97,723	50.80%	-3,335	-1,693	-4,075	-2,090	51.30%	211,104
1962	52,345	106,821	49.00%	-7,146	-3,502	-11,221	-5,591	49.80%	218,347
1963	53,400	111,316	48.00%	-4,756	-2,282	-15,977	-7,873	49.30%	221,951
1964	54,757	118,528	46.20%	-5,915	-2,733	-21,892	-10,605	48.40%	222,055
1965	50,620	118,228	42.80%	-1,411	-604	-23,303	-11,210	48.10%	221,678
1966	58,111	134,532	43.20%	-3,698	-1,597	-27,001	-12,807	47.40%	221,545
1967	71,417	157,464	45.40%	-8,643	-3,920	-35,644	-16,727	46.90%	219,907
1968	81,926	178,134	46.00%	-25,161	-11,572	-60,805	-28,299	46.50%	237,315
1969	82,497	183,640	44.90%	3,242	1,456	-57,563	-26,842	46.60%	224,013
1970	81,692	195,649	41.80%	-2,842	-1,187	-60,405	-28,029	46.40%	225,484
1971	78,872	210,172	37.50%	-23,033	-8,644	-83,438	-36,673	44.00%	237,519
1972	79,174	230,681	34.30%	-23,373	-8,022	-106,811	-44,695	41.80%	250,951
1973	76,681	245,707	31.20%	-14,908	-4,653	-121,719	-49,347	40.50%	265,729
1974	79,347	269,359	29.50%	-6,135	-1,807	-127,854	-51,155	40.00%	263,051
1975	86,509	332,332	26.00%	-53,242	-13,859	-181,096	-65,014	35.90%	309,707
1976	89,619	371,792	24.10%	-73,732	-17,773	-254,828	-82,787	32.50%	382,690
TQ	22,269	95,975	23.20%	-14,744	-3,421	-269,572	-86,208	32.00%	398,807
1977	97,241	409,218	23.80%	-53,659	-12,751	-323,231	-98,959	30.60%	444,100
1978	104,495	458,746	22.80%	-59,185	-13,481	-382,416	-112,440	29.40%	491,646

1979	116,342	504,028	23.10%	-40,726	-9,401	-423,142	-121,840	28.80%	524,712
1980	133,995	590,941	22.70%	-73,830	-16,741	-496,972	-138,581	27.90%	591,077
1981	157,513	678,241	23.20%	-78,968	-18,339	-575,940	-156,921	27.20%	664,944
1982	185,309	745,743	24.80%	-127,977	-31,801	-703,917	-188,722	26.80%	790,078
1983	209,903	808,364	26.00%	-207,802	-53,959	-911,719	-242,680	26.60%	981,741
1984	227,413	851,853	26.70%	-185,367	-49,486	-1,097,086	-292,166	26.60%	1,151,853
1985	252,748	946,396	26.70%	-212,308	-56,700	-1,309,394	-348,866	26.60%	1,337,454
1986	273,375	990,441	27.60%	-221,227	-61,062	-1,530,621	-409,928	26.80%	1,549,767
1987	281,999	1,004,083	28.10%	-149,730	-42,052	-1,680,351	-451,980	26.90%	1,677,713
1988	290,361	1,064,481	27.30%	-155,178	-42,328	-1,835,529	-494,308	26.90%	1,822,398
1989	303,559	1,143,829	26.50%	-152,639	-40,509	-1,988,168	-534,817	26.90%	1,970,628
1990	299,331	1,253,130	23.90%	-221,036	-52,798	-2,209,204	-587,615	26.60%	2,177,147
1991	273,292	1,324,331	20.60%	-269,238	-55,561	-2,478,442	-643,175	26.00%	2,430,408
1992	298,350	1,381,649	21.60%	-290,321	-62,691	-2,768,763	-705,867	25.50%	2,703,341
1993	291,086	1,409,522	20.70%	-255,051	-52,672	-3,023,814	-758,538	25.10%	2,922,744
1994	281,642	1,461,907	19.30%	-203,186	-39,145	-3,227,000	-797,683	24.70%	3,077,915
1995	272,066	1,515,884	17.90%	-163,952	-29,426	-3,390,952	-827,108	24.40%	3,230,264
1996	265,753	1,560,608	17.00%	-107,431	-18,294	-3,498,383	-845,402	24.20%	3,343,149
1997	270,505	1,601,307	16.90%	-21,884	-3,697	-3,520,267	-849,099	24.10%	3,347,826
1998	268,207	1,652,685	16.20%	69,270	11,242	-3,450,997	-837,858	24.30%	3,262,917
1999	274,785	1,702,035	16.10%	125,610	20,279	-3,325,387	-817,579	24.60%	3,135,719
2000	294,394	1,789,216	16.50%	236,241	38,871	-3,089,146	-778,708	25.20%	2,898,391
2001	304,759	1,863,190	16.40%	128,236	20,975	-2,960,910	-757,733	25.60%	2,785,480
2002	348,482	2,011,153	17.30%	-157,758	-27,335	-3,118,668	-785,068	25.20%	2,936,235
2003	404,778	2,160,117	18.70%	-377,585	-70,755	-3,496,253	-855,823	24.50%	3,257,327
2004	455,847	2,293,006	19.90%	-412,727	-82,050	-3,908,980	-937,872	24.00%	3,595,203
2005	495,326	2,472,205	20.00%	-318,346	-63,783	-4,227,326	-1,001,656	23.70%	3,855,852
2006	521,840	2,655,435	19.70%	-248,181	-48,772	-4,475,507	-1,050,428	23.50%	4,060,048
2007	552,568	2,730,241	20.20%	-162,002	-32,787	-4,637,509	-1,083,215	23.40%	4,255,497

Source: GRS calculations based on data from Office of Management and Budget, Historical Tables; Budget of the United States Government, FY2009, February 2008

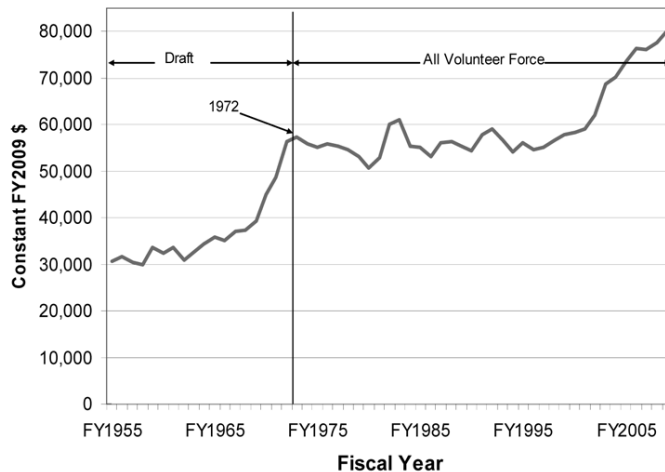
SUBJECT: COST OF MILITARY PERSONNEL BEFORE AND AFTER THE INCEPTION OF THE
ALL VOLUNTEER FORCE

This is in response to your request, in a question at a House Budget Committee hearing on February 4, for information on the relative cost of military personnel under the draft compared to their cost since the inception of the All Volunteer Force (AVF) in 1972. During the hearing, I noted that personnel have become considerably more expensive since beginning of the AVF, but I did not have detailed information immediately at hand.

This memo provides three tables and one figure in response to your request. Table 1 and Figure 1 show all compensation provided to active duty military personnel in military personnel budget accounts per service member from FY1955, following the Korean War, through FY2009, excluding war costs in FY1990-FY1992 and from FY2003 on. The amounts are shown both in current year prices and in inflation adjusted constant FY2009 prices, with figures adjusted for inflation using the consumer price index. These data are consistent with information I provided on the cost of personnel since FY1972 in written testimony on February 4. The amounts appropriated in the military personnel accounts provide cash compensation and deferred retirement benefits for uniformed personnel, but do not include either tax benefits that are not part of the Department of Defense budget nor benefits such as medical care and child care services, that are financed in DOD operation and maintenance accounts.

Table 1 provides a reasonably complete picture of the relative cost of personnel under a draft compared to the cost of personnel since the inception of the All Volunteer force. The amounts in the table reflect all major elements of cash compensation of military personnel plus the value of retirement benefits. The final column of Table 1 shows that compensation per service member in constant FY2009 prices grew from about \$36,000 in FY1955 to \$49,000 in FY1970, just before the AVF was implemented, to \$57,000 in FY1973, after the AVF was in place. Subsequently, compensation declined in the 1970s, as annual pay raises fell behind inflation, but grew to \$61,000, again in FY2009 prices, in FY1983, following “catch-up” pay raises of 11% in FY1980 and of 14% in FY1981. Average compensation remained at about that level through the 1990s and then began to increase substantially, growing to about \$80,000 per service member by FY2009—again, all in constant, inflation adjusted dollars, using the CPI as a measure of inflation. These elements of compensation grew by more than 40% above inflation between FY1998 and FY2009. Figure 1 illustrates the long-term trend.

FIGURE 1. MILITARY PERSONNEL FUNDING PER ACTIVE DUTY SERVICE MEMBER, FY1955-
FY2009
[Constant FY2009 \$ Adjusted Using CPI-U]



Source: CRS based on Department of Defense data for budget amounts and end-strength and Bureau of Labor Statistics for CPI-U inflation index.

Notes: Funding amounts include all military pay and benefits financed in the military personnel accounts of annual appropriations bills, excluding pay and benefits of reserve personnel.

These include basic pay, basic allowance for housing, subsistence, retired pay and medical benefits accrual contributions to the military retirement fund, bonuses and other special pays and allowances, permanent change of station travel allowances, and other cash allowances. The amounts do not reflect medical benefits or in-kind benefits funded in operation and maintenance accounts. Amounts are for the base defense budget only, not including war-related funding in FY1990-FY1992 and from FY2003 through FY2009. End-strength levels also exclude reserves mobilized for military operations in those years.

TABLE 1.—MILITARY PERSONNEL FUNDING PER ACTIVE DUTY SERVICE MEMBER, FY1955–FY2009
[Budget authority in current year dollars and in constant FY2009 dollars using CPI-U]

Fiscal year	Active Duty Military Personnel Funding (Current Year \$ in Millions)	Active Duty Military Personnel Funding (FY2009 \$ in Millions)	Active Duty End-Strength (000s)	Funding per Active Duty Service Member (Current Year \$)	Funding per Active Duty Service Member (FY2009 \$)
FY1955	11,060	89,707	2,935	3,768	30,565
FY1956	11,096	88,597	2,807	3,953	31,563
FY1957	11,008	85,229	2,795	3,938	30,494
FY1958	10,378	77,985	2,599	3,993	30,006
FY1959	11,313	84,391	2,504	4,518	33,703
FY1960	10,878	79,982	2,476	4,393	32,303
FY1961	11,439	83,505	2,483	4,607	33,631
FY1962	12,028	86,571	2,808	4,284	30,830
FY1963	12,400	88,006	2,700	4,593	32,595
FY1964	13,111	92,408	2,687	4,879	34,391
FY1965	13,827	95,480	2,656	5,206	35,949
FY1966	16,170	108,725	3,093	5,228	35,152
FY1967	19,170	124,787	3,375	5,680	36,974
FY1968	21,098	132,286	3,547	5,948	37,295
FY1969	22,837	135,696	3,460	6,600	39,218
FY1970	24,564	137,937	3,066	8,012	44,989
FY1971	24,595	132,294	2,714	9,062	48,745
FY1972	25,164	131,211	2,324	10,828	56,459
FY1973	26,300	129,223	2,253	11,673	57,356
FY1974	27,254	120,579	2,163	12,600	55,746
FY1975	28,976	117,512	2,129	13,610	55,196
FY1976	30,401	116,368	2,081	14,609	55,919
FY1977	31,870	114,687	2,075	15,359	55,271
FY1978	33,706	112,572	2,062	16,346	54,594
FY1979	36,080	108,135	2,031	17,765	53,242
FY1980	39,561	104,472	2,063	19,176	50,641
FY1981	46,418	111,098	2,101	22,093	52,879
FY1982	56,603	127,701	2,130	26,574	59,954
FY1983	60,349	132,069	2,163	27,900	61,058
FY1984	57,746	120,935	2,184	26,440	55,373
FY1985	60,002	121,430	2,207	27,187	55,020
FY1986	59,570	118,445	2,233	26,677	53,043
FY1987	65,620	125,823	2,244	29,242	56,071
FY1988	67,723	124,708	2,209	30,658	56,454
FY1989	69,351	121,781	2,203	31,480	55,280
FY1990	69,759	116,303	2,144	32,537	54,246
FY1991	75,007	119,964	2,077	36,113	57,758
FY1992	71,477	111,017	1,880	38,020	59,052
FY1993	66,499	100,239	1,775	37,464	56,473
FY1994	61,775	90,840	1,678	36,815	54,136
FY1995	62,090	88,750	1,583	39,223	56,064
FY1996	60,421	83,900	1,538	39,285	54,551
FY1997	60,924	82,688	1,504	40,508	54,979
FY1998	59,535	79,535	1,406	42,343	56,569
FY1999	61,347	80,175	1,386	44,262	57,846
FY2000	63,853	80,765	1,384	46,137	58,356
FY2001	66,568	81,868	1,386	48,029	59,068
FY2002	71,096	86,091	1,386	51,296	62,114
FY2003	80,506	95,339	1,386	58,085	68,787
FY2004	84,414	97,371	1,386	60,905	70,253
FY2005	91,396	101,973	1,386	65,942	73,573
FY2006	95,766	103,459	1,357	70,595	76,267
FY2007	96,247	101,094	1,328	72,451	76,100

TABLE 1.—MILITARY PERSONNEL FUNDING PER ACTIVE DUTY SERVICE MEMBER, FY1955–FY2009—Continued

[Budget authority in current year dollars and in constant FY2009 dollars using CPI-U]

Fiscal year	Active Duty Military Personnel Funding (Current Year \$ in Millions)	Active Duty Military Personnel Funding (FY2009 \$ in Millions)	Active Duty End-Strength (000s)	Funding per Active Duty Service Member (Current Year \$)	Funding per Active Duty Service Member (FY2009 \$)
FY2008	100,761	102,978	1,326	76,009	77,681
FY2009	109,469	109,469	1,368	80,004	80,004

Sources: CRS using data from the Department of Defense and adjusted for inflation using the Consumer Price Index for Urban Wage Earners (CPI-U) from the Bureau of Labor Statistics

Notes: Amounts include all funding provided in military personnel accounts for active duty personnel. Amounts do not reflect medical care and in-kind benefits such as child care services, commissary and exchange privileges, and recreational facilities, financed in operation and maintenance accounts

As a complement to the data in Table 1, Tables 2 and 3 show monthly basic pay of representative enlisted personnel and officers, at the most common grade levels, for selected years (the data go back to 1905 for enlisted personnel and to 1922 for officers). These data are taken directly from tables in background papers prepared by the Library of Congress Federal Research Division for the Office of the Secretary of Defense in preparation for the Ninth Quadrennial Review of Military Compensation.¹ The data are derived from annual pay tables, which show, within each grade, pay levels for personnel with increasing numbers of years of service. The Table 2 shows monthly basic pay of an “E-4” enlisted service member, and Table 3 shows monthly basic pay of an “O-3” grade officer. These grades were chosen because they represent the most common ranks in today’s force. The most common grade level of an enlisted service member in 2008 was “E-4,” which corresponds to a rank of corporal or specialist in the Army, corporal in the Marine Corps, senior airman in the Air Force, and Petty Officer Third Class in the Navy. The most common grade level of an officer in 2008 was O-3, which corresponds to a rank of Captain in the Army, Air Force, and Marine Corps, and to Lieutenant in the Navy. Amounts are shown in current year dollars and in constant FY2009 prices, again adjusted for inflation using the CPI.

It is important to note that basic pay is only a part of cash and deferred compensation. In FY2008, funding for basic pay was 49% of the total provided in military personnel budget accounts. Other elements of cash compensation included housing and subsistence allowances, clothing allowances, special pays and bonuses, permanent change of station moving allowances, and a number of other smaller categories of compensation. In all, these parts of compensation totaled 23% of funding. Financing of future retirement benefits comprised the remaining 28%. Though they do not reflect a complete picture of military compensation, these tables of monthly basic pay are provided in order to present a more concrete comparison of military pay when the draft was in effect with pay of members of the current professional military force.

If CRS can be of any further assistance, please contact Stephen Daggett by direct phone at 202 707-7642 or by e-mail at sdaggett@crs.loc.gov.

¹Dr. Glenn Curtis, Military Compensation Background Papers: Sixth Edition, Federal Research Division, Library of Congress, Washington, DC, May 2005, <http://www.loc.gov/rr/frd/pdf-files/Military-Comp.pdf>. The gaps in the table, which skip over most years until 1940, are as shown in the background tables—CRS did not alter the information in current year prices in any way. It would require additional research to fill in the figures for intervening years.

TABLE 2.—MONTHLY BASIC PAY SCHEDULE FOR E-4 ENLISTED PERSONNEL, SELECTED YEARS FROM 1905-2004—Continued
 [Monthly pay at rank with years of service]

	Under 2	Over 2	Over 3	Over 4	Over 6	Over 8	Over 10	Over 12	Over 14	Over 16	Over 18	Over 20	Over 22	Over 24	Over 26	Over 30
Jan-87	814	860	910	981	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019	1,019
Jan-88	830	877	928	1,000	1,040	1,040	1,040	1,040	1,040	1,040	1,040	1,040	1,040	1,040	1,040	1,040
Jan-89	864	913	966	1,041	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082	1,082
Jan-90	896	946	1,001	1,079	1,121	1,121	1,121	1,121	1,121	1,121	1,121	1,121	1,121	1,121	1,121	1,121
Jan-91	932	984	1,042	1,123	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167	1,167
Jan-92	971	1,026	1,086	1,170	1,216	1,216	1,216	1,216	1,216	1,216	1,216	1,216	1,216	1,216	1,216	1,216
Jan-93	1,007	1,064	1,126	1,213	1,261	1,261	1,261	1,261	1,261	1,261	1,261	1,261	1,261	1,261	1,261	1,261
Jan-94	1,029	1,087	1,151	1,240	1,289	1,289	1,289	1,289	1,289	1,289	1,289	1,289	1,289	1,289	1,289	1,289
Jan-95	1,056	1,115	1,181	1,272	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322	1,322
Jan-96	1,081	1,142	1,209	1,303	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354	1,354
Jan-97	1,114	1,176	1,246	1,342	1,395	1,395	1,395	1,395	1,395	1,395	1,395	1,395	1,395	1,395	1,395	1,395
Jan-98	1,145	1,209	1,280	1,379	1,434	1,434	1,434	1,434	1,434	1,434	1,434	1,434	1,434	1,434	1,434	1,434
Jan-99	1,186	1,253	1,327	1,429	1,485	1,485	1,485	1,485	1,485	1,485	1,485	1,485	1,485	1,485	1,485	1,485
Jan-00	1,243	1,313	1,390	1,497	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557
Jul-00	1,243	1,313	1,390	1,497	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557
Jan-01	1,289	1,424	1,501	1,576	1,653	1,653	1,653	1,653	1,653	1,653	1,653	1,653	1,653	1,653	1,653	1,653
Jan-02	1,444	1,518	1,600	1,680	1,752	1,752	1,752	1,752	1,752	1,752	1,752	1,752	1,752	1,752	1,752	1,752
Jan-03	1,503	1,580	1,665	1,749	1,824	1,824	1,824	1,824	1,824	1,824	1,824	1,824	1,824	1,824	1,824	1,824
Jan-04	1,558	1,638	1,727	1,814	1,892	1,892	1,892	1,892	1,892	1,892	1,892	1,892	1,892	1,892	1,892	1,892
Jul-1904	1,346	1,346	1,346	1,413	1,413	1,481	1,481	1,548	1,548	1,615	1,615	1,615	1,615	1,615	1,615	1,615
Oct-40	929	929	929	1,022	1,022	1,088	1,088	1,115	1,115	1,161	1,161	1,161	1,161	1,161	1,161	1,161
Aug-41	1,037	1,037	1,037	1,126	1,126	1,170	1,170	1,215	1,215	1,259	1,259	1,259	1,259	1,259	1,259	1,259
Jun-42	1,049	1,049	1,101	1,154	1,154	1,206	1,206	1,259	1,259	1,311	1,311	1,364	1,364	1,468	1,521	1,573
Jul-46	1,111	1,111	1,166	1,166	1,222	1,222	1,278	1,333	1,333	1,389	1,444	1,500	1,555	1,611	1,666	1,666
Oct-49	1,073	1,140	1,140	1,207	1,274	1,341	1,408	1,476	1,543	1,610	1,744	1,744	1,744	1,744	1,744	1,744
May-52	1,008	1,071	1,071	1,134	1,197	1,260	1,323	1,386	1,449	1,512	1,638	1,638	1,638	1,638	1,638	1,638
Apr-55	992	1,139	1,139	1,297	1,360	1,455	1,518	1,541	1,645	1,708	1,771	1,771	1,771	1,771	1,771	1,771
Jun-58	919	1,127	1,202	1,278	1,353	1,428	1,428	1,428	1,428	1,428	1,428	1,428	1,428	1,428	1,428	1,428
Oct-63	868	1,278	1,348	1,455	1,526	1,526	1,526	1,526	1,526	1,526	1,526	1,526	1,526	1,526	1,526	1,526
Sep-64	862	1,300	1,372	1,480	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554
Sep-65	1,143	1,415	1,492	1,610	1,690	1,690	1,690	1,690	1,690	1,690	1,690	1,690	1,690	1,690	1,690	1,690
Jul-66	1,134	1,422	1,499	1,618	1,698	1,698	1,698	1,698	1,698	1,698	1,698	1,698	1,698	1,698	1,698	1,698
Oct-67	1,158	1,453	1,533	1,654	1,736	1,736	1,736	1,736	1,736	1,736	1,736	1,736	1,736	1,736	1,736	1,736

CONSTANT 2009 \$ ADJUSTED USING CPI-U

TABLE 2.—MONTHLY BASIC PAY SCHEDULE FOR E-4 ENLISTED PERSONNEL, SELECTED YEARS FROM 1905-2004—Continued

	[Monthly pay at rank with years of service]															
	Under 2	Over 2	Over 3	Over 4	Over 6	Over 8	Over 10	Over 12	Over 14	Over 16	Over 18	Over 20	Over 22	Over 24	Over 26	Over 30
Jan-04	1,797	1,890	1,992	2,093	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182	2,182

Source: All data in current year dollars from Library of Congress, Federal Research Division, Military Compensation Background Papers, Volume 1, May 2005. Data in constant FY2009 dollars calculated by CRS using CPI deflators from the Department of Commerce, Bureau of Labor Statistics for all years from 1913 on and, for years prior to 1913, from Professor Robert Sahr, Oregon State University, Inflation Conversion Factors for Dollars 1774 to Estimated 2018, available on line at: <http://oregonstate.edu/cia/polisci/faculty-research/sahr/sahr.htm>

TABLE 3.—MONTHLY BASIC PAY SCHEDULE FOR O-3 OFFICERS, SELECTED YEARS FROM 1922-2004

	[Monthly pay at rank with years of service]															
	Under 2	Over 2	Over 3	Over 4	Over 6	Over 8	Over 10	Over 12	Over 14	Over 16	Over 18	Over 20	Over 22	Over 24	Over 26	Over 30
Jul-22	200	200	210	210	220	220	230	240	240	250	325	338	350	350	363	375
Jun-42	200	200	210	210	220	220	230	240	240	313	325	338	350	350	363	375
Jul-46	230	230	242	242	253	253	265	276	276	344	358	371	385	385	399	413
Oct-49	314	314	314	328	342	356	371	385	399	413	428	428	442	442	442	442
May-52	326	326	326	341	356	371	385	400	415	430	445	445	459	459	459	459
Apr-55	326	326	351	374	406	421	437	452	468	484	499	499	515	515	515	515
Jun-58	326	346	372	415	440	460	480	510	525	525	525	525	525	525	525	525
Oct-63	326	440	470	520	545	565	595	625	640	640	640	640	640	640	640	640
Sep-64	354	451	482	533	559	579	610	641	656	656	656	656	656	656	656	656
Sep-65	428	478	511	565	592	614	647	679	695	695	695	695	695	695	695	695
Jul-66	442	493	527	583	611	633	667	701	718	718	718	718	718	718	718	718
Oct-67	466	521	556	616	645	669	705	740	758	758	758	758	758	758	758	758
Jul-68	498	557	595	659	690	715	753	791	810	810	810	810	810	810	810	810
Jul-69	561	627	670	742	777	805	848	890	912	912	912	912	912	912	912	912
Jan-70	606	678	724	802	840	870	917	962	986	986	986	986	986	986	986	986
Jan-71	654	731	781	865	906	939	989	1,038	1,064	1,064	1,064	1,064	1,064	1,064	1,064	1,064
Nov-71	654	731	781	865	906	939	989	1,038	1,064	1,064	1,064	1,064	1,064	1,064	1,064	1,064
Jan-72	701	784	838	927	971	1,007	1,061	1,113	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141
Oct-72	748	836	894	989	1,037	1,074	1,131	1,188	1,217	1,217	1,217	1,217	1,217	1,217	1,217	1,217
Oct-73	794	888	949	1,050	1,100	1,140	1,201	1,261	1,292	1,292	1,292	1,292	1,292	1,292	1,292	1,292
Oct-74	838	937	1,001	1,108	1,161	1,203	1,268	1,331	1,363	1,363	1,363	1,363	1,363	1,363	1,363	1,363
Oct-75	880	984	1,052	1,164	1,219	1,263	1,331	1,397	1,431	1,431	1,431	1,431	1,431	1,431	1,431	1,431
Oct-76	912	1,019	1,090	1,206	1,263	1,309	1,379	1,448	1,483	1,483	1,483	1,483	1,483	1,483	1,483	1,483

CURRENT YEAR DOLLARS

MR. GILMORE'S RESPONSES TO QUESTIONS FOR THE RECORD

QUESTION FROM CHAIRMAN SPRATT

Do you have a rule of thumb at CRS or CBO for what it costs to move a division or a brigade with full equipment sent back to the States from Iraq? Could you submit, for the record, your growth estimation that—your rule of thumb for, division set, brigade set, whatever the proper unit is?

Answer: The Congressional Budget Office (CBO) estimates that it would cost approximately \$50 million (in 2009 dollars) to transport a fully manned and equipped Army heavy brigade combat team (HBCT) from Iraq to the United States.

CBO's estimate reflects several assumptions. First, since Kuwait is the primary entry and exit point for units deploying to and redeploying from the Iraqi theater of operations, CBO assumes that the brigade's equipment and personnel would leave the Iraqi theater of operations through Kuwait. In addition, CBO assumes that the brigade's equipment would be sealifted from Kuwait to the United States, and that personnel would be airlifted from Kuwait to the United States. Once the equipment reaches the United States, CBO assumes that the brigade's equipment would be moved by rail from the port of arrival to the brigade's final destination.

Based on historical Department of Defense (DoD) cost factors for transporting equipment and personnel, CBO estimates that the sealift costs, including costs associated with handling the brigade's equipment at the departing and arriving ports, would be \$33 million and would be the single largest cost associated with the transportation of an HBCT from Iraq to the United States. In addition, CBO estimates that the transportation of personnel from Iraq to the United States via Kuwait would cost \$8 million. The remainder of the cost estimated by CBO is associated with the movement of equipment from Iraq to Kuwait and from the arriving port in the United States to its final destination.

The cost to transport Army combat brigades from Iraq to the United States would not account for all of the transportation costs of withdrawing U.S. forces from Iraq. The U.S. military has many units in Iraq that are not Army combat brigades, and it has supplies and equipment not associated with any specific unit. In particular, the Army has a substantial number of forces in the Iraqi theater of operations that provide support to its combat brigades. Those support units contain more total personnel than do the Army's combat brigades. Moreover, the Navy, Air Force, and Marine Corps all have units in the Iraqi theater of operations that would need to be redeployed.

DoD also maintains a substantial stock of additional equipment (primarily its so-called Theater-Provided Equipment pool) not directly associated with any single unit that would need to be redeployed, although DoD may have plans to leave some of that equipment pool behind in Iraq. Finally, DoD has a substantial stock of supplies and ammunition that would also be redeployed. The need to transport the personnel and equipment not associated with Army combat brigades means that the total transportation costs of withdrawing U.S. forces from Iraq will be greater than the costs of withdrawing the Army's combat brigades.

Thus, the cost to re-deploy personnel and equipment not associated directly with HBCTs is likely to be significant.

QUESTIONS FROM REPRESENTATIVE DELAURO

1. As you are likely aware, the Navy recently declared a so-called Nunn-McCurdy violation for the VH-71 presidential helicopter replacement program. Last year, the Defense Department announced that the total acquisition costs for the program were projected to increase from \$6.5 billion to \$11.2 billion. Now, merely two years after submitting initial baseline estimates, the Navy is confirming that the cost per helicopter will be at least 50 percent higher than the original estimate.

In recent testimony, Secretary Gates identified acquisitions as a chief challenge facing the Defense Department and specifically mentioned the VH-71 as a "big ticket" item experiencing contract or program performance problems, suggesting that "the FY 2010 budget must make hard choices." As we examine cost growth in Defense programs, how do you think we should approach big contract issues such as this one? What policies are needed to control such egregious cost over-runs? On the VH-71 program in particular, with the modifications and the new requirements being as extensive as they are, and the fact that had these changes been clear from the outset competing firms would likely have submitted different proposals, do you think a re-competition of Increment II of the program is worthwhile to identify whether this helicopter can be made at a better value to the taxpayer?

Answer: As I stated in my testimony, realistic cost estimates developed as early as possible in the life of a program are key to developing realistic budgets and to

avoiding subsequent cost increases. A realistic estimate would use parametric analysis of past costs for programs with technical content analogous to the proposed program's content. A realistic estimate would also account not just for the requirements stated at a program's inception but for changes in requirements that might reasonably be expected.

Whether it would be worthwhile to re-compete Increment II of the presidential helicopter program because of the changes in requirements that have occurred is a policy decision that must be made by the Congress and DoD. CBO does not make recommendations for how to decide such policy issues.

2. As with the controversial original award for the Air Force KC-X aerial refueling tanker contract, the Marine One contract was awarded to a consortium that involved a substantial amount of work being outsourced overseas. I believe such outsourcing of defense contracts runs against both U.S. national security and economic interests, eroding our defense industrial base, costing jobs and stunting economic growth. Do you believe, particularly in these very difficult economic times, that the Defense Department should consider adjusting its methodology to account for potential job creation and economic growth when considering proposals for major projects such as the KC-X and VH-71?

Answer: Whether it would be worthwhile to account for potential job creation and economic growth when considering proposals for major projects such as the KC-X and VH-71 is a policy decision that must be made by the Congress and DoD. CBO does not make recommendations for how to decide such policy issues.

QUESTION FROM REPRESENTATIVE LANGEVIN

I sit on not only the Budget Committee, but also the House Armed Services Committee. And following the debate on the issue of the DDG-1000 versus the 51 that is going on right now, and just for my own knowledge and clarification for the record, when you talk about the range of potential costs, whether it is 4 or 5 to \$6 billion for the DDG-1000, I would assume that you are talking about the first ship, which obviously is the most expensive and then costs moderate over time as you achieve economies of scale. Can you clarify that for the record?

And also talk about your analysis on start-up costs if we were to start the DDG-51 line. And you estimate real costs of what that would be, what that ship would be per copy now with the add on technologies. And also the tradeoffs versus going with the DDG-1000 and the fact that these aren't supposed to be incorporating follow-on or transformational technologies that would, at a later point, be used on the cruiser or other platforms. So that it is kind of you can't just talk about the 51 in a vacuum, you know, they have other modern technologies that would be applied to other platforms and would be of course useful as the cruisers develop. So if you could just kind of talk about those for a few minutes.

Mr. GILMORE. Well, the cost numbers that I quoted of \$4 billion to \$5 billion were, for the first ship, exclusive of the development costs; so, they excluded the development costs, the design costs for the ship, the cost of building the first ship. And then, yes, we do assume in our estimate that subsequent costs, subsequent ships' costs, are less; that there is a learning effect that occurs.

Mr. LANGEVIN. So can you estimate what the following costs would be?

Answer: The table displayed below, taken from CBO testimony before the Seapower Subcommittee of the House Armed Services Committee on July 31, 2008, displays estimates of the costs of follow-on DDG-1000 ships and of buying one or two DDG-51s per year. The DDG-51s are assumed for this analysis to have the same design as the DDG-112, the last ship purchased in 2005.

PROJECTED COSTS OF CONSTRUCTING DDG-1000 AND DDG-51 DESTROYERS, 2009 TO 2013

[Billions of 2009 Dollars]

	2009	2010	2011	2012	2013	Total
DDG-1000 Zumwalt Class (One per year, 3rd through 7th ships)	3.7	3.8	3.6	3.7	3.6	18.5
DDG-51 Arleigh Burke Class:						
One per year starting in 2010	0.4	2.2	2.3	2.3	2.4	9.6
Two per year starting in 2010	0.4	3.7	3.8	3.9	3.9	15.7
DDG-1000 (Navy's Estimate)	2.5	2.5	2.2	2.3	2.0	11.4

Source: Congressional Budget Office.

Notes: All estimates include outfitting and postdelivery costs of \$50 million to \$60 million per ship. The DDG-1000 cost estimate assumes a single ship would be ordered every year from one of two alternating shipyards.

In its testimony from July 2008, CBO assumed the cost to restart DDG-51 production—which is separate from purchasing the ships themselves—would be about \$400 million. Recently, a memorandum leaked to the trade press from John Young, Undersecretary of Defense for Acquisition, Technology, and Logistics, implied that the cost to restart the DDG-51 line would be \$348 million.

CBO cannot estimate the cost of future surface combatants that include new technologies at this time. The Navy has not determined which technologies, and at what pace, it will incorporate in future ships or how many of those types of ships it will buy. In addition, the Navy has not yet determined, officially, whether the future surface combatant would be based on a DDG-51 hull or a DDG-1000 hull. Determining which hull the Navy would use for a future surface combatant will have a substantial effect on the cost of those ships.

For your reference, I am also providing the table below, which displays growth in the projected cost of the DDG-1000 program that has occurred since its inception as the DD-21 program in 1997.

GROWTH IN THE ESTIMATED COSTS OF THE FIFTH SHIP OF THE DD-21/DD(X)/DDG-1000
DESTROYER PROGRAM, SELECTED YEARS

	Billions of 2009 dollars
1997 Navy Cost Goals (DD-21):	
Objective Goal	1.2
Threshold Goal	1.4
2004 Future Years Defense Program	1.6
2009 Navy Estimate	2.1
2009 CBO Estimate	3.6

Sources: Department of the Navy, Fiscal Year 2009 Budget Estimates, Shipbuilding and Conversion (February 2008); Department of Defense, Future Years Defense Program for Fiscal Year 2004; and Department of the Navy, DD-21 Program Office, DD-21 Program Brief (October 19, 1998).

Notes: All years are federal fiscal years. For the historical comparison, the numbers exclude outfitting and postdelivery costs of about \$60 million per ship.

QUESTIONS FROM REPRESENTATIVE AUSTRIA

1. The successful completion of the most recent round of BRAC and military R&D are both very important to central Ohio. Can you tell me by service, whether BRAC is currently projected to achieve the savings that were envisioned? If the savings aren't realized, has DOD indicated how they will respond?

Answer: Estimates of the savings generated by implementing the 2005 base realignment and closure (BRAC) recommendations (the most recent round) have declined relative to initial projections. In 2005, the BRAC Commission estimated that annual recurring savings due to the 2005 BRAC round would be about \$4.2 billion for fiscal year 2012 and beyond. DoD's 2009 budget submission indicates that net annual savings due to BRAC would be about \$4 billion.

Estimates of the costs to implement the 2005 BRAC round have increased relative to initial projections. The BRAC Commission originally estimated that the costs to implement the 2005 BRAC round would total about \$21 billion. DoD's 2009 budget submission indicates that total costs to implement the 2005 BRAC round are now about of \$32 billion.

Because of higher costs and smaller expected savings, estimates of the net savings attributable to BRAC over the 20-year period ending in 2025 have declined. The BRAC Commission estimated in 2005 that total savings over that period would be about \$36 billion (in constant 2005 dollars). In 2009, the Government Accountability Office (GAO) calculated that total savings over that period would equal about \$14 billion (in constant 2005 dollars, see the GAO report, *Military Base Realignments and Closures: DOD Faces Challenges in Implementing Recommendations on Time and Is Not Consistently Updating Savings Estimates*, GAO-09-217, January 2009).

Estimates of savings by service arising from BRAC are not available to CBO. Both DoD and GAO, which has published multiple reports on BRAC, should be able provide those data.

CBO is not aware of a position taken by DoD on how the department would respond to realizing lesser BRAC savings. In testimony before the Subcommittee on Readiness of the House Armed Services Committee on December 12, 2007, the Deputy Undersecretary of Defense (Installations and Environment) acknowledged the difficulty of estimating savings due to BRAC. He stated, however, that "the fact that BRAC has generated substantial savings has not been credibly questioned."

2. I would like to discuss two Air Force programs—the F-22 and the Joint Strike Fighter (JSF). What is the status of these two systems? How can we get DoD to do realistic budgeting?

The F-22 Raptor is the newest Air Force fighter in service. Like the F-15C Eagle that it is replacing, the F-22 was designed primarily as an air-to-air fighter. However, the Air Force plans to make the F-22 capable of launching some types of air-to-ground weapons. Since the retirement of the F-117 in 2007, the F-22 is the only stealthy fighter (able to elude detection by radar) currently in the Air Force inventory. The latest plans released by DoD call for fielding 183 F-22s. The last of those aircraft were funded in the 2009 budget at a cost of about \$150 million per aircraft. As of February 2009, 135 F-22s had been delivered to the Air Force. DoD also has indicated that it plans to spend approximately \$8 billion to upgrade the F-22's capabilities.

The Air Force has stated the need for no fewer than 381 F-22s, although recent remarks by the Chairman of the Joint Chiefs of Staff have indicated that requirements may be revised downward to around 240 aircraft, about 60 more than in DoD's current plans. In the Department of Defense Appropriations Act, 2009 (Division C of Public Law 110-329), the Congress included \$523 million for advanced procurement of 20 more F-22s (in addition to the 183 that are planned), pending a decision by the new Administration on whether to continue production. That decision is expected to be announced when DoD releases its detailed 2010 budget request in April 2009.

The F-35 is currently under development for use by the Air Force, Navy, and Marine Corps. The F-35 has been designed as a stealthy multirole fighter with an emphasis on ground attack capabilities but incorporating substantial air-to-air capabilities as well. Three versions of the F-35 are being developed: the land-based F-35A, the short takeoff/vertical landing (STOVL) F-35B, and the aircraft carrier-based F-35C. Under the latest plans released by DoD, the Air Force would purchase 1,763 F-35As by 2034 (at a maximum rate of 80 aircraft per year from 2015 to 2033), and the Navy and Marine Corps would purchase an unspecified mix of F-35Bs and F-35Cs totaling 680 aircraft by 2025 (at a maximum rate of 50 aircraft per year from 2014 through 2022).

Funding for production versions of the F-35 JSF began in fiscal year 2007. Through fiscal year 2009, funds had been appropriated for 14 Air Force aircraft and 12 Navy Department aircraft. Current schedules call for the first F-35 squadrons to be operational in the Marine Corps, Air Force, and Navy by 2012, 2013, and 2015, respectively. As of December 2007, DoD estimated that slightly more than \$200 billion in constant 2009 dollars would be needed from 2010 through 2034 to complete development and planned procurement of the F-35. Many observers remain concerned, however, that costs for the JSF will be higher than reported. (See, for example, the GAO report, *Joint Strike Fighter: Recent Decisions by DOD Add to Program Risks*, GAO-08-388, March 2008.)

Two recent Congressional Research Service reports provide more detailed overviews of the F-22 and F-35 programs. See *F-22A Raptor*, Congressional Research Service, RL31673, December 19, 2008; and *F-35A Lightning II Joint Strike Fighter (JSF) Program: Background, Status, and Issues*, Congressional Research Service, RL30563, February 17, 2009.

As I stated in my testimony, realistic cost estimates developed as early as possible in the life of a program are key to developing realistic budgets and to avoiding subsequent cost increases. A realistic estimate would use parametric analysis of past costs for programs with technical content analogous to the proposed program's content. A realistic estimate also would account not just for the requirements stated at a program's inception but for changes in requirements that might reasonably be expected.

[Whereupon, at 12:40 p.m., the committee was adjourned.]