Analysis of the FY 2005 Defense Budget Request

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by

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EXECUTIVE SUMMARY

The Bush Administration has requested $423.1 billion in budget authority (BA) for national defense in fiscal year (FY) 2005, including about $402.6 billion for the Department of Defense (DoD) and $20.5 billion for Department of Energy and other defense-related programs. The request represents about a 5 percent real (inflation-adjusted) increase from the level provided for national defense through regular, annual appropriations in FY 2004 (i.e., excluding the $65 billion FY 2004 emergency supplemental enacted to cover the cost of military operations in Iraq, Afghanistan and elsewhere).

After being cut deeply in the first half of the 1990s, following the end of the Cold War, the defense budget has been on an upward path since FY 1998. The administration's FY 2005 defense budget request is 32 percent higher in real terms than the budget enacted in FY 1998. The proposed level of funding is also substantially greater than the level typically provided for defense during the Cold War. The FY 2005 request is roughly 12 percent higher than the average Cold War budget. Moreover, under the administration's long-term plan, funding for defense would increase to about 23 percent above average Cold War levels by 2009. The administration's latest proposal would also provide about $22 billion more for defense over the FY 2005-09 period than was projected in last year's plan.

The administration's latest defense plan includes a number of programmatic changes as well. Among other things, the administration recently announced its intention to cancel the Comanche helicopter program, and the Army announced plans to reorganize its forces. As was the case with the first three Bush Administration budget requests, the FY 2005 request also includes a substantial increase in funding for ballistic missile defense (BMD) programs. In other respects, however, the administration's latest defense plan fairly closely resembles those of previous years, and the plan it inherited from the Clinton Administration. The main difference between the Clinton Administration's last proposal and the Bush Administration's plan is that the latter comes closer to proposing the level of funding that would actually be required to execute DoD's overall modernization and force structure plans. However, even the levels of funding projected in the administration's latest budget proposal are unlikely to prove sufficient to pay for DoD's very ambitious plans.

MILITARY OPERATIONS IN IRAQ AND ELSEWHERE

The administration's budget request does not include funding to cover the incremental costs (i.e., costs above and beyond those DoD would normally incur in peacetime) likely to result from the US military's involvement in operations in Iraq and Afghanistan, as well as certain homeland security activities (e.g., Operation Noble Eagle) being carried out in the United States in 2005. It is impossible to estimate precisely how much funding will be required to cover these costs, since it is unclear how large a US presence will be needed in Iraq and Afghanistan in 2005. However, given the administration's current plans and timetable for operations in those countries, it seems likely that at least several tens of billions of dollars will be required to cover these costs. Based on DoD and Congressional Budget Office (CBO) data, a reasonable estimate for the likely cost of these various military operations for next year might be $30-50 billion. The administration has indicated that it will request supplemental appropriations to cover these costs in January 2005.

HOW MUCH IS ENOUGH?

Whether the requested increase in defense spending is necessary to meet US security requirements adequately is unclear. As noted above, fully implementing the administration's defense plan would likely require spending substantially more on defense than proposed by the administration. Despite its high costs, this plan may also fall short of meeting US security requirements if the kinds of challenges faced by the US military change significantly over the coming years. On the other hand, it might be possible to meet US security requirements adequately at lower budget levels by adopting a slightly smaller military and a modernization plan focused more on transformation-oriented weapon systems. In other words, the ability of the US military to meet future challenges effectively is likely to have more to do with how wisely we spend our defense dollars, than on how much more we spend.

HIGHLIGHTS OF THE ADMINISTRATION'S BUDGET PROPOSAL

- During the 2000 presidential campaign, then-candidate Bush argued that the US military must be transformed to counter effectively the very different kinds of challenges projected to emerge over the next several decades. He also suggested that transforming the US military would require reducing investments in some traditional types of forces and programs. The Bush Administration has made some noteworthy transformation-related changes to DoD's plans. And it has initiated some changes intended to improve the US Army's ability to carry out stability operations. However, its efforts appear to fall short in a number of important respects. Perhaps most significantly, DoD's plans still do not seem to adequately address the "anti-access" challenge that increasingly confronts US power projection capabilities, and continues to fund a number of very costly acquisition programs that appear ill-suited to the emerging threat environment.

- The administration's FY 2005 budget request includes $47.4 billion for homeland security. About $27.2 billion of this request is allocated to the Department of Homeland Security (the Department would also receive $13.0 billion for non-homeland security missions, such as maritime safety). Another $8.0 billion would be provided to the Department of Defense (DoD), for its homeland security-related programs and activities. The remaining funding would be divided between the Departments of Health and Human Services, Justice, Energy, and more than two dozen other departments and agencies. The request represents about a 13 percent real increase from the level of funding provided for FY 2004. Whether or not this level of funding is adequate is unclear. Given the enormous challenges related to homeland security that the United States faces, further substantial increases may be needed. On the other hand, even if more funding is needed, it might be appropriate to allow the departments and agencies involved in the homeland security mission some time to absorb the large increases enacted over the past several years.

- The 2005 budget request would provide some $141.2 billion for O&M. This level is quite high by historical standards, and should be adequate to cover normal peacetime O&M funding requirements. It is less clear whether the O&M funding levels projected for later years of the administration's plan would be adequate. Additional O&M funding will clearly have to be provided in FY 2005 assuming US forces remain deployed in Iraq, Afghanistan and elsewhere.

- Notwithstanding the fact that many military personnel have been deployed away from home for extended periods of time in recent years, the Services have continued to meet most of their recruitment and retention goals. As a result, overall, the quality of personnel in the US military remains very high. The FY 2005 request includes $106 billion for military personnel. This would be sufficient to fund average pay raises of 3.5 percent and eliminate out-of-pocket expenses for off-base housing. The size of the pay raises needed in future years will depend, among other things, on the strength of the US economy and whether US forces remain heavily deployed in military operations in Iraq and elsewhere.

- The FY 2005 defense budget request includes a $4.2 billion increase in funding for R&D. This boost, coming on top of similarly large increases over the past three years, would bring DoD's R&D budget to $68.9 billion, its highest level ever. This is $27.3 billion, or 57 percent more in real terms, than was provided in FY 2001 and 21 percent above the level provided in FY 1987, the Cold War peak for defense R&D. Robust funding for R&D is probably appropriate, given the need to transform the US military, and the likelihood that in the future the US military will face challenges that are significantly greater than and different from those it faces today. But whether increases of this magnitude are needed, or whether the new R&D budget request emphasizes the most important priorities, is debatable. It is also unclear whether the request is consistent with a sound transformation strategy. For example, while it would provide $1.5 billion more for Missile Defense Agency R&D, compared to FY 2004, it would provide $1.5 billion less for Science and Technology (S&T) programs—and strong S&T efforts are likely to be critical for transformation.

- The FY 2005 budget request provides $74.9 billion for weapons procurement. Under the administration's plan, funding for procurement is projected to increase to about $106 billion (FY 2005 dollars) by FY 2009. It is widely agreed that funding for procurement needs to be increased. But, as in the case of R&D, there is less agreement concerning just how much funding needs to be provided for procurement. Estimates provided by CBO suggest that implementing the administration's current modernization plan would require increasing procurement funding to an average of roughly $110-135 billion (FY 2005 dollars) annually over the FY 2010-22 period. On the other hand, an approach that included the purchase of some next-generation weapons systems, but focused relatively more on the production of new current-generation systems, and upgrades of existing systems—perhaps similar to the "skip a generation" approach that was considered, but ultimately rejected, by the Bush Administration—might cost substantially less.

- The large increases projected in the current plan may not be sustainable over the long term. The long-term federal budget picture has dramatically worsened over the past three years. In early 2001, CBO projected a 10-year surplus of about $5.6 trillion over the FY 2002-11 period. By contrast, CBO's baseline estimate now projects *deficits* totaling $2.012 billion over the next decade (FY 2005-14). The dramatic change in the government's fiscal outlook has resulted from the enactment of large tax cuts, as well as a weak economy and other factors. Unfortunately, it is likely that the outlook will deteriorate still further in coming years. According to CBO, enactment of the President's proposed budget would push total federal deficits to some $2.75 trillion over the FY 2005-14 period, and keep the government in the red throughout the entire decade. Others project that deficit totals could reach some $5 trillion over the coming decade.

I. INTRODUCTION

The Bush Administration has requested $423.1 billion in budget authority (BA) for national defense in fiscal year (FY) 2005, including about $402.6 billion for the Department of Defense (DoD) and $20.5 billion for Department of Energy and other defense-related programs. The request represents about a 5 percent increase in real (inflation-adjusted) terms (all changes in funding noted in this analysis are expressed in real terms) from the level provided for national defense through regular, annual appropriations in FY 2004 (i.e., excluding the $65 billion FY 2004 emergency supplemental enacted to cover the cost of military operations in Iraq, Afghanistan and elsewhere[1]).

After being cut deeply in the first half of the 1990s, following the end of the Cold War, the defense budget has been on an upward path since FY 1998. The administration's FY 2005 defense budget request is 32 percent higher than the budget enacted in FY 1998. The proposed level of funding is also substantially greater than the level typically provided for defense during the Cold War. The FY 2005 request is roughly 12 percent higher than the average Cold War budget.[2] Moreover, under the administration's long-term plan, funding for defense would increase to about 23 percent above average Cold War levels by 2009. The administration's latest proposal would also provide about $22 billion more for defense over the FY 2005-09 period than was projected in last year's plan.[3]

The administration's latest defense plan includes a number of programmatic changes as well. The administration's latest defense plan includes several changes from last year's plan. Among other things, the administration recently announced its intention to cancel the Comanche helicopter program, and the Army announced plans to reorganize its forces. As was the case with the first three Bush Administration budget requests, the FY 2005 request also includes a substantial increase in funding for ballistic missile defense (BMD) programs. In other respects, however, the administration's latest defense plan fairly closely resembles those of previous years, and the plan it inherited from the Clinton Administration. The main difference between the Clinton Administration's last proposal and the Bush Administration's plan is that the latter comes closer to proposing the level of funding that would actually be required to execute DoD's overall modernization and force structure plans. However, even the levels of funding projected in the administration's latest budget proposal are unlikely to prove sufficient to pay for DoD's very costly plans.

Under the administration's proposed budget, funding for national defense would reach some $463.6 billion (FY 2005 dollars) by FY 2009, while DoD's budget would reach about $446

[1] In addition to $65 billion in funding for military operations, the $87 billion FY 2004 emergency supplemental included about $22 billion for reconstruction and other assistance.

[2] For purposes of this comparison, the Cold War is defined as the FY 1946-FY 1990 period.

[3] The increase is larger when adjusted for inflation (since inflation was lower in FY 2003 and is now projected to be lower in FY 2004 through FY 2009, than was assumed in last year's plan). The increase amounts to about $40 billion FY 2005 dollars.

billion. However, a recent report by the Congressional Budget Office (CBO) concluded that—assuming historical rates of cost growth in operations and support (O&S) activities and modernization programs—executing existing plans could require substantially higher DoD funding levels, perhaps as much as an additional $75 billion a year over the long term.[4]

Achieving and sustaining such high levels of funding for defense is likely to be very difficult. The large federal surpluses projected just a few years ago have disappeared due to the enactment of large tax cuts, the weak economy and other factors. Over the coming decade, budget pressures caused by the ballooning federal deficit may greatly limit the room for further increases in defense spending—especially toward the end of this decade when the baby boomer generation begins to retire. If a decision is made to adopt serious deficit reduction measures, history strongly suggests that cuts in defense spending—or at a minimum slower rates of growth in defense spending—will be part of the solution adopted. The 12 percent reduction in defense spending that occurred between FY 1985 and FY 1990, before the end of the Cold War, in large part reflected a bipartisan effort to begin reducing deficits.

MILITARY OPERATIONS IN IRAQ AND ELSEWHERE

The administration's budget request does not include funding to cover the incremental costs (i.e., costs above and beyond those DoD would normally incur in peacetime) likely to result from the US military's involvement in operations in Iraq and Afghanistan, as well as certain homeland security activities (e.g., Operation Noble Eagle) being carried out in the United States in 2005. It is impossible to estimate precisely how much funding will be required to cover these costs, since it is unclear how large a US presence will be needed in Iraq and Afghanistan in 2005. However, given the administration's current plans and timetable for operations in those countries, it seems likely that at least several tens of billions of dollars will be required to cover these costs. Based on DoD and Congressional Budget Office (CBO) data, a reasonable estimate for the likely cost of these various military operations for next year might be $30-50 billion.[5] These figures are also consistent with a recent statement by Joshua Bolton, the Director of the Office of Management and Budget (OMB), that $50 billion represents the "upper limit" what is likely to be needed to cover the costs of military operations in 2005.[6] DoD Comptroller, Dov Zakheim, has indicated that the administration plans to submit a supplemental request to cover the FY 2005 costs of ongoing military operations in January 2005.[7]

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[4] Congressional Budget Office (CBO), "The Long-Term Implications of Current Defense Plans: Detailed Update for Fiscal Year 2004," February 2004, p. 3. CBO data indicates that, assuming historical rates of cost growth in operations and support (O&S) and acquisition costs, as well as continued US involvement in various military operations, executing the current defense plan would require an average of some $473 billion (FY 2004 dollars) annually between FY 2004 and FY 2009, and about $533 billion annually over the FY 2010-22 period. This is equivalent to roughly $523 billion in FY 2005 dollars over the FY 2004-22 period.

[5] For a discussion of four illustrative scenarios for the occupation of Iraq over the 2004-13 period, see CBO, Letter to the Honorable John Spratt, Ranking Member, House Budget Committee, October 28, 2003.

[6] Adam Entous, "Bush May Need Up to $50 billion Extra for Iraq," *Reuters*, February 2, 2004. Available at: www.Reuters.com/news.

[7] Tony Capaccio, "Deficit Cut Won't Curb Defense Spending, Zakheim Says," *Bloomberg.com*, January 26, 2004.

HOW MUCH IS ENOUGH?

Whether the requested increase in defense spending is necessary to meet US security requirements adequately is unclear. As noted above, fully implementing the administration's defense plan would likely require spending substantially more on defense than proposed by the administration. Despite its high costs, this plan may also fall short of meeting US security requirements if the kinds of challenges faced by the US military change significantly over the coming years. On the other hand, it might be possible to meet US security requirements adequately at lower budget levels by adopting a scaled-back and more transformation-oriented defense plan. In other words, the ability of the US military to meet future challenges effectively is likely to have more to do with how wisely we spend our defense dollars, than on how much more we spend.

ORGANIZATION OF REPORT

This analysis of the FY 2005 defense budget request is broken down into three main sections. The introduction provides an overview of three important issues: the extent to which the administration's request appears to be consistent with a sound transformation strategy, the funding levels proposed for homeland security, and the sustainability of the administration's proposed increase in funding for defense in the face of other budget priorities. The second part of this report (Chapter II) discusses how the administration's FY 2005 request would affect each of the major areas of the defense budget, including the operations and maintenance (O&M), military personnel, research and development (R&D), and procurement portions of the budget. Lastly, the appendix to this report contains tables and graphs which chart past and projected future funding levels for the overall defense budget, various categories of defense spending and selected weapons programs.

TRANSFORMATION

During the 2000 presidential campaign, then-candidate Bush argued that the US military must be transformed to counter effectively the very different kinds of challenges projected to emerge over the next several decades as a result of the ongoing "Revolution in Military Affairs" (RMA). He also suggested that transforming the US military would require not only investing in new kinds of capabilities, but also reducing investments in some traditional types of forces and weapons programs. Likewise, in the 2001 Quadrennial Defense Review (QDR), the administration stated that continuing a "business as usual approach" in DoD was not a viable option, and cautioned that "without change the current defense program will only become more expensive to maintain over time and will forfeit many of the opportunities available to the United States today."[8]

The Bush Administration has made some noteworthy transformation-related changes to DoD's plans. It has cancelled several major weapons programs and begun or accelerated several promising new programs. Among other things, the administration decided to convert four Trident ballistic missile submarines to carry conventional Tomahawk cruise missiles, and to accelerate

[8] *Quadrennial Defense Review Report* (Washington, DC: DoD, September 30, 2001), p. 16.

and expand the acquisition of some unmanned systems. It has also pushed ahead with a wide variety of programs and initiatives related to improving "C4ISR" (command, control, communications, computers, intelligence, surveillance and reconnaissance) and precision-strike capabilities. In addition, as demonstrated in Afghanistan and Iraq, administration guidance appears to have encouraged greater joint integration in military operations. In addition, the administration has initiated several changes, in the Army in particular, intended to improve its ability to carry out stability operations.

Notwithstanding these changes, however, the administration's transformation efforts appear to fall short in a number of important respects. With the exception of the Navy's Area Missile Defense program, and the Army's Crusader artillery system and Comanche helicopter programs, the administration has decided to move ahead with essentially all of the major acquisition program included in the Clinton Administration's defense plan. Likewise, the Bush Administration's defense plan calls for maintaining Army, Navy, Air Force, and Marine Corps forces of roughly the same size and shape as those included in the last Clinton Administration plan. Perhaps most significantly, DoD's plans still do not seem to adequately address the "anti-access" challenge that increasingly confronts US power projection capabilities.[9] In particular, current plans may not focus enough attention or funding on the development of long-range precision-strike and C4ISR capabilities, or deep insertion capabilities for special operations forces.

While the administration's defense plan includes a number of significant initiatives to add to or expand existing transformation-related efforts, the amount of funding provided for these efforts is relatively small compared to the levels provided for some other programs which appear ill-suited to the emerging threat environment. The most questionable of these may be the Services' three new tactical fighter programs, whose total costs could exceed $300 billion over the next several decades. This focus on relatively short-range tactical fighters seems at odds with recent experience in Afghanistan, Iraq and elsewhere which suggests that, in the future, the US military may often have difficulty securing access to forward air bases.

HOMELAND SECURITY

The Bush Administration's FY 2005 budget request includes $47.4 billion for homeland security. About $27.2 billion of this request is allocated to the Department of Homeland Security (the Department would also receive $13.0 billion for non-homeland security missions, such as maritime safety). Another $8.0 billion would be provided to the Department of Defense (DoD), for its homeland security-related programs and activities. The remaining funding would be divided between the Departments of Health and Human Services ($4.3 billion), Justice ($2.6 billion), Energy ($1.5 billion), and more than two dozen other departments and agencies.

The FY 2005 request for homeland security represents about a 13 percent increase from the level of funding provided for FY 2004. With this increase, funding for homeland security will have

[9] For a discussion of the anti-access challenge, see, for example, Andrew Krepinevich, Barry Watts and Robert Work, *Meeting the Anti-Access and Area-Denial Challenge* (Washington, DC: Center for Strategic and Budgetary Assessments, 2003).

increased by some 180 percent between FY 2001 and FY 2005 (excluding funding provided through emergency supplemental appropriations).

The request would allocate funding to a broad range of programs and activities related to homeland security, including intelligence and warning ($474 million), border and transportation security ($17.1 billion), domestic counterterrorism ($3.4 billion), protecting critical infrastructure and key assets ($14.1 billion), defending against catastrophic threats ($3.4 billion), emergency preparedness and response ($8.8 billion) and $197 million for other programs.

Whether or not the FY 2005 budget request for homeland security is adequate is unclear. Given the enormous challenges related to homeland security that the United States faces, further substantial increases may be needed. A 2003 report by a task force of the Council on Foreign Relations concluded that US funding for emergency responders (e.g., police, fire and rescue personnel) was some $20 billion a year below the level needed to meet requirements.[10] Similar shortfalls may exist in other areas of homeland security as well. Conversely, even if more funding is needed, it might be appropriate to allow the departments and agencies involved in the homeland security mission some time to absorb the large increases in funding enacted over the past several years.

SETTING THE TOPLINE FOR DEFENSE

The large increases in funding for defense projected in the administration's defense plan may not be sustainable over the long term. In the aftermath of the terrorist attacks of September 11, 2001, defense spending has become a higher priority for most Americans, especially as it relates to homeland security and the war on terrorism, but it is still far from the only priority. Over the long term, the defense mission will have to compete with other priorities of the American public and political leadership. These goals include cutting taxes, reducing the federal debt, ensuring the health and durability of Social Security and Medicare, and providing greater resources for education, health research and other domestic programs.

The long-term federal budget picture has dramatically worsened over the past three years. In early 2001, CBO projected a 10-year surplus of about $5.6 trillion over the FY 2002-11 period.[11] By contrast, CBO's baseline estimate now projects *deficits* totaling $2.012 billion over the next decade (FY 2005-14).[12] The dramatic change in the government's fiscal outlook has resulted from the enactment of large tax cuts, as well as a weak economy and other factors. Unfortunately, it is likely that the outlook will deteriorate still further in coming years. In its most recent budget request, the administration has proposed to extend the expiring provisions of the 2001 and 2003 tax cuts. At the same time it is also proposing further increases in funding for

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[10] Report of an Independent Task Force Sponsored by the Council on Foreign Relations (CFR), Warren B. Rudman, Chair, *Emergency Responders: Drastically Underfunded, Dangerously Unprepared* (New York, NY: CFR, 2003). 13.

[11] CBO, *The Budget and Fiscal Outlook: Fiscal Years 2002-2011* (Washington, DC: CBO, January 2001), p. 2.

[12] Douglas Holtz-Eakin, Director, CBO, Letter to the Honorable Ted Stevens summarizing CBO's forthcoming analysis of the President's budget request, February 27, 2004, p.1.

defense and homeland security. According to CBO, enactment of the President's proposed budget would push total federal deficits to some $2.75 trillion over the FY 2005-14 period, and keep the government in the red throughout the entire decade.[13]

Worse yet, this estimate almost certainly understates the actual cost of the administration's proposals. Among other things, the CBO estimate of the President's proposed budget does not include the cost of a war in Iraq and other military operations, or the full cost of extending relief from the Alternative Minimum Tax (AMT).[14] The administration's plan also assumes that spending on domestic discretionary programs (e.g., education, transportation and health research) will be cut. Making more realistic assumptions about these factors could push likely deficit levels to some $5 trillion over the coming decade.[15]

As bad as the deficit picture appears to be for the coming decade, it is likely to worsen dramatically in the years after 2014. The reason deficits are projected to become so much worse is that members of the baby boomer generation will begin retiring around the end of this decade. This has enormous implications both for federal spending and revenue. Because of the retirement of the baby boomers, spending on Social Security and Medicare is projected to increase from about 6.9 percent of GDP in 2002 to 8.9 percent by 2020 and 12.1 percent by 2040.[16] Covering these costs will become ever more difficult as the ratio of working-to-retired Americans declines. Today, there are nearly five adult Americans 20-64 years of age for every American over 65. By 2020 the ratio will drop to less than four-to-one, and by 2030 it will fall to less that three-to-one.[17] As a result of these pressures, the Bush Administration's own budget documents project that the federal government will run deficits continuously over the next 50 years, and that the size of the deficit will grow from about 1 percent of gross domestic product (GDP) in 2014 to 1.7 percent in 2020, 5.0 percent in 2030, and 8.7 percent by 2040.[18] Others have projected that deficits could increase to as much as 6.2 percent of GDP by 2020, 12.3 percent by 2030 and 21.1 percent by 2040.[19]

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[13] Ibid, table 1.

[14] Since, unlike the regular income tax code, the AMT is not indexed to inflation, unless relief is provided the number of taxpayers that would be subject to the AMT would grow from about two million today to some 39 million by 2012. The administration's proposal includes AMT relief, but only through FY 2006. In reality, it seems highly unlikely that either the president or the leadership of either party in Congress would allow the AMT to expand in this way.

[15] See, for example, Joint Statement issued by the Center for Budget and Policy Priorities (CBPP), the Committee for Economic Development, and the Concord Coalition, "Mid-Term and Long-Term Deficit Projections," September 29, 2003, and Ed McKelvey, "The Federal Deficit: a $5.5 Trillion Red Elephant," Goldman Sachs, September 9, 2003.

[16] CBO, "Social Security and the Federal Budget: The Necessity of Maintaining a Comprehensive Long-Range Perspective," August 1, 2002, p. 4.

[17] CBO, "The Looming Budgetary Impact of Society's Aging," July 3, 2002, p. 6.

[18] Office of Management and Budget (OMB), *Fiscal Year 2005 Budget of the US Government, Analytical Perspectives* (Washington, DC: US Government Printing Office, 2004), p. 191.

[19] CBPP, p. 15.

The generally bleak fiscal outlook outlined above does not, of course, *prove* that the administration's proposed funding increases for defense are not sustainable over the long run. These projections do, however, suggest that sustaining these increases could be difficult, and will likely require making hard choices between defense and other important priorities over the coming decade and beyond.

II. THE ADMINISTRATION'S BUDGET REQUEST

The following section provides a brief analysis of how major funding categories and programs would fare under the administration's FY 2005 budget request.

OPERATIONS AND MAINTENANCE

The O&M budget covers the costs of purchasing fuel, spare parts and many other items associated with carrying out training activities, as well as real world operations in Iraq, Afghanistan and elsewhere. As such, the readiness of the US military to fight effectively on short notice is largely dependent on the provision of adequate funding in this account. In addition, the O&M budget covers the costs of many programs less immediately related to near-term readiness, such as military health care, base operations and other support, or "infrastructure," activities. These costs include the salaries of most civilian DoD personnel, who perform many of DoD's infrastructure functions.

The FY 2005 budget request would provide some $141.2 billion for O&M. This level is quite high by historical standards, and should be adequate to cover normal peacetime O&M funding requirements. (As noted earlier, additional funding will be needed to cover O&M cost associated with military operations in Iraq, Afghanistan and elsewhere, conducted in FY 2005.) The administration's request works out to about $102,000 per active duty troop. This is roughly 50 percent more than DoD provided per troop in FY 1990, the year the United States began sending forces to the Persian Gulf in preparation for Operation Desert Storm. That US forces have been able to sustain high readiness levels in recent years has been well demonstrated by the effectiveness of their performance in Iraq and Afghanistan. The budget request also indicates that, measured by traditional indicators, such as training rates (e.g., aircraft flying hours, ship steaming days and Army tank miles), readiness levels will remain high in FY 2005.

Although the readiness of the US military has changed relatively little since end of the Cold War (at least as measured by traditional indicators), the amount of funding provided for O&M activities has, as noted above, grown significantly on a per-troop basis. Most of this growth has been absorbed by infrastructure-related programs and activities. On a per troop basis, readiness-related O&M spending (including funding for equipment maintenance and repair) now appears to be modestly higher than it was in FY 1990. On the other hand, funding for infrastructure-related activities has grown significantly.[20] Today, infrastructure-related activities account for some 60 percent of DoD's O&M budget.

Some observers have pointed to cost growth in a variety of non-traditional activities (sometimes referred to as "non-defense" defense programs) funded through the O&M budget, such as environmental cleanup and weapons dismantlement aid the states of the former Soviet Union, to

[20] Estimates of readiness- and infrastructure-related O&M funding per troop were derived from CBO data. Gregory T. Kiley, *The Effects of Equipment Aging on the Costs of Operating and Maintaining Military Equipment* (Washington, DC: CBO, August 2001), p. 10.

explain the increase in infrastructure-related funding. But most such growth ended by the mid-1990s.

The great bulk of the cost growth that has occurred in infrastructure-related O&M activities has clearly involved more traditional functions. Some sources of this cost growth are easy to identify, such as military health care and pay for civilian DoD personnel. But the source of much of this growth is unclear. In addition to military health care, the O&M budget covers the costs of a wide variety of other infrastructure-related functions, such as installation support, headquarters and administration, central (i.e., non-unit) training, personnel support, and recruiting.[21] Although, due to data limitations, trends in some of these areas are difficult to ascertain, taken as a whole, spending on these infrastructure-related functions appears to have increased substantially since the end of the Cold War.

Given the difficulty of precisely determining the cause of past cost growth in DoD's O&M budget, not surprisingly, it is difficult to project future funding requirements with great confidence. Overall, however, it is probably safe to assume that costs will continue to increase. Among the areas most likely to experience significant cost growth are the following:

- **Military Health Care.** Adjusted for changes in the size of the force, military health care costs have grown substantially over the past decade and a half. This was due partly to increases in the cost of providing medical services, partly to the fact that the overall beneficiary population (which includes military retirees and dependents, as well as active duty troops) declined much more modestly than did the size of the force structure, and partly due to the expansion of health care benefits. The FY 2005 request would provide some $28 billion for military health care, including about $18 billion for activities funded through the O&M budget. Health care costs for the civilian population are projected to grow well above the rate of inflation over the next decade, and there is little reason to believe that the military's health care costs will grow any more slowly.

- **Equipment Maintenance and Repair.** Through most of the 1990s, the age of the Services' weapons inventory increased only modestly, despite the fact that relatively few weapons were purchased during the decade. This is because the Services bought large quantities of new weapons systems in the 1980s, and then in the 1990s cut the size of the force structure by about one-third, with the oldest equipment generally being retired first. However, the buildup of the 1980s is now receding further into the past, and most of the planned force structure cuts were completed by the middle of the decade. As a result, the average age of most major weapons systems is projected to increase substantially over the next decade. To date, the aging of the Services' weapons inventory does not seem to have resulted in a substantial increase in operations and maintenance costs.[22] However, as the aging of the force accelerates over the coming decade, age-related O&M costs could grow significantly,

[21] For a discussion of O&S funding trends for many of these functions, see Perrot and Kiley, *The Long-Term Implications of Current Defense Plan* (Washington, DC: CBO, January 2003), pp. 15-35.

[22] Kiley, *The Effects of Equipment Aging on the Costs of Operating and Maintaining Military Equipment*, p. 8.

perhaps by as much as $5 billion annually by 2010.[23] Moreover, replacing these weapons with newer systems may, at best, only partially offset this cost growth, since the greater complexity of some new weapons systems can also lead to higher O&M costs.[24]

- **Facilities Maintenance and Repair.** It is widely believed that DoD has spent too little over the past decade or more on maintaining, repairing and constructing military bases, housing and other facilities. According to the administration, recent levels of funding would allow DoD, on average, to replace facilities only once every 192 years. DoD would like to reduce the replacement rate down to about 67 years, more in line with commercial standards. The administration has proposed to defer this effort until after 2005, when a new round of base closures is scheduled to begin. It argues that substantially increasing funding for military construction prior to 2005 does not make sense because it might lead to spending money on many bases that could be closed a short time later. In the meantime, under the administration's plan, DoD would focus its efforts on critical repairs. This approach may be unavoidable, given Congress' unwillingness to authorize a new base closure round sooner. But deferring needed repairs and construction so long may increase the total amount that ultimately needs to be paid for these efforts. Although it is unclear precisely how much funding for facilities upkeep and construction will need to be increased in future years, some significant increase will almost certainly prove necessary.[25]

If DoD were able to manage its infrastructure-related functions more efficiently, it might be possible to reduce the rate of O&M cost growth in the future. As noted earlier, this has been an area of substantial and, to a large extent, unexplained cost growth over the past decade and a half. Proposals aimed at reducing infrastructure-related O&M costs include making greater use of "competitive sourcing" (allowing private sector contractors to compete for maintenance, repair and other work currently performed at public sector facilities) and closing excess military bases. The administration and others claim that as much as 25 percent of the existing basing structure is in excess of requirements, and that closing those unneeded facilities could ultimately yield savings of some $3 billion a year.[26] Likewise, according to a 1996 study by a panel of DoD's Defense Science Board (DSB), through competitive sourcing and other initiatives, DoD might eventually be able to achieve annual recurring savings of as much as $30 billion. If history is any guide, however, the actual level of savings is likely to be much more modest.[27] As such,

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[23] Steven M. Kosiak, "Three Myths About DoD's Weapons Modernization Requirements," CSBA, June 18, 2001, p. 5.

[24] Perrot and Kiley, *The Long-Term Implications of Current Defense Plan*, pp. 21.

[25] Funding for maintaining and repairing military facilities is found in the O&M budget, as well as the Military Construction and Family Housing budgets, while construction funding is provided through the latter two accounts.

[26] Adam Talaber, *The Long-Term Implications of Current Defense Plans: Summary Update for Fiscal Year 2004*, CBO, July 2003, p. 5. The number of domestic military bases that will be closed will be affected, among other things, by the results of the DoD's Global Posture Review. This review is expected to recommend that a smaller number of US troops be permanently based at major bases in Europe and the Pacific, and that more troops be temporarily rotated through facilities located nearer to regions of interest to the United States. As a result, fewer domestic US bases might be closed than had been anticipated earlier.

[27] For a discussion of problems and prospects for efficiency savings within DoD, see Robert F. Hale, *Promoting Efficiency in the Department of Defense: Keep Trying, But Be Realistic* (Washington, DC: CSBA, January 2002).

while these initiatives should be vigorously pursued, the best that is likely to be achieved is some slowing of the rate of cost growth in O&M, rather than actual reductions in funding requirements.

As a result of legislation enacted in 2003, DoD has also received authority to reform and reorganize the way it manages its civilian workforce substantially. The changes include: reducing the time required to hire new personnel; replacing the General Schedule (GS) system for determining pay levels with one that give managers greater discretion to tie pay to performance; and making it easier to fire civilian workers.[28] Although some observers expect the new National Security Personnel System (NSPS) system to help DoD save money, as in the case of other proposed efficiency initiatives, it is unclear whether these changes will yield significant savings over the long term.

If O&M costs do continue to grow, and the overall DoD budget is not increased in a substantial and sustained way, it will probably prove impossible to boost procurement funding significantly. During the Clinton Administration, O&M cost growth was a key factor delaying projected increases in the procurement accounts. For much of that period, the Clinton Administration submitted budgets which projected significant increases in procurement two or more years down the road. But each year, O&M costs proved to be higher than anticipated, forcing the administration to add funding to the O&M accounts and push back the projected upturn in procurement funding.

Under the administration's latest plan, funding for O&M is projected to grow at an average annual rate of about 1.5 percent over the FY 2005-09 period.[29] However, given the budget pressures discussed above, and the fact that, historically, O&M costs per troop have consistently and persistently increased at an average annual rate of 2-3 percent, the administration's projected funding levels may prove inadequate. If more funding is needed to cover higher O&M costs, as in the past, DoD's procurement accounts may end up being used as the bill payers to cover those costs. The only way to avoid such migration out of procurement and into O&M might be to increase the overall DoD budget by even more than currently projected, or make offsetting cuts in other parts of the defense budget, such as research and development (R&D) funding or force structure.

MILITARY PERSONNEL

Overall, the quality of personnel in the US military—a critical element in the readiness of US forces—remains very high. Some of the Services fell short of meeting their recruitment and retention goals several years ago. The Army, Navy and Air Force each failed to meet their recruitment goals once or twice over the FY 1999-2000 period, and several of the Services failed to meet their overall retention goals in one or more years during the FY 1999-2001 period. The

[28] Critics have raised concerns that the new system, among other things, does not adequately protect civilian employees from the possibility of being subjected to unwarranted or arbitrary discipline.

[29] This estimate of O&M funding includes health care costs, which DoD has separated out from other O&M costs in some budget documents.

high operational tempo experienced over the past few years as a result of US military operations in Afghanistan, Iraq and elsewhere, has also raised concerns that the Services, particularly the Army, might now suffer substantial shortfalls in recruitment and, especially, retention. However, the most recent data indicates that the Services' efforts to attract and retain quality personnel have continued, at least through the end of 2003, to be successful.

Through greater use of enlistment bonuses and other incentives, all four Services have been able to meet or exceed their recruitment goals since 2000. Moreover, they have also been able to keep their quality standards relatively high. Continuing a trend that began in the 1980s, in recent years over 90 percent of the Services' recruits have been high school graduates and over 65 percent have scored above average on the Armed Forces Qualification Test (AFQT). Recent trends in retention also appear to be generally positive. In 2002 and 2003, each of the Services met or exceeded most of their retention goals for active duty forces—although these data may overstate the Army's success somewhat, since it continues to use "stop-loss" orders to retain some military personnel who might otherwise have separated from service.

In an effort to improve military recruitment and retention, the Clinton Administration and Congress agreed to a very costly military pay and retirement package as part of the FY 2000 defense budget. Under the law, future military pay raises were set at half a percentage point above the employment cost index (ECI), a measure of private sector wage growth. The package also provided for higher pay raises for military personnel in certain pay grades, as well as funding for expanded use of re-enlistment bonuses and other incentives to help with recruitment and retention. At the same time, the military retirement system was changed so that military personnel who joined after July 31, 1986, like those who joined in prior years, will now be able to retire at 50 percent (rather than 40 percent) of basic pay after 20 years of service.

Since coming to office, the Bush Administration has built upon and expanded the pay-related initiatives begun under the previous administration and Congress. Thanks to various across-the-board and targeted raises, military pay is now substantially higher than it was just a few years ago. For example, basic pay for an Army Sergeant with 10 years of experience is now about 21 percent higher than it was in 1999 in real terms. The FY 2005 request includes $106.3 billion for military personnel. This would be sufficient to fund average pay raises of 3.5 percent for military personnel (by comparison, the FY 2005 request includes only a 1.5 percent pay raise for civilian personnel). Under the FY 2005 request, all out-of-pocket living expenses associated with off-base housing would also be eliminated—completing a multiyear effort to reduce those costs begun at the end of the Clinton Administration.

Given the importance of recruiting and retaining quality military personnel, and the stress caused by the deployment of large numbers of troops in Iraq and elsewhere, the pay raise and improvements in military housing included in the administration's FY 2005 budget request are probably appropriate. It is less clear how much military pay should be increased in the future. In recent years, the Joint Chiefs of Staff (JCS) and others have argued in favor of large raises on grounds that military personnel are paid substantially less than comparable private-sector workers. However, studies by CBO, RAND and others indicate that there is little or no pay gap.[30]

[30] See, for example, Richard L. Fernandez, "What Does the Military 'Pay Gap' Mean?," CBO, June 1999.

Among other things, the size of the pay raises needed to meet recruitment and retention goals in the future will depend on the strength of the US economy and whether US forces remain heavily deployed in military operations in Iraq and elsewhere. In any case, to the extent problems do develop, the sounder approach might be to target additional pay raises and bonuses to those categories of personnel which the Services are having the most difficulty recruiting and retaining rather than providing further large across-the-board increases in pay and benefits.

FORCE STRUCTURE

In the 2001 QDR, the Bush Administration decided to maintain essentially the same force structure (e.g., numbers of Army divisions, Navy carrier battle groups and Air Force fighter wings) proposed and adopted by the Clinton Administration (see Table 1). In recent years, each of the Services has made a case for increasing personnel levels and members of Congress have proposed that as many as 80,000 additional troops should be added. However, to date the administration has resisted these proposals. In its latest budget submission, the administration continues to oppose any permanent increase in the military's overall active duty end strength. In fact, under the latest administration plan, the military's permanent active duty end strength would fall from 1.391 million this year to 1.383 million in FY 2005.

While the administration has rejected proposals to increase the Army's active duty end strength permanently, it has proposed that (using its emergency authority) the Army's active duty end strength be temporarily kept about 30,000 troops above its congressionally authorized level. The Army plans to use these additional troops, which are expected to be needed for about four years, both to relieve some of the pressure created by the large deployments in southwest Asia and to facilitate its plans to reorganize the Army's force structure. The Army is currently organized around 10 active divisions, each of which consists of three combat brigades, plus three separate brigades and regiments—for a total of 33 combat brigades. Under the Army's new plan, a fourth brigade would be created out of each division—increasing the total number of combat brigades to 43-48. The extra troops needed for these brigades would be provided by shifting personnel from missions and functions for which the Army currently has excess capability (e.g., field artillery and air defense) and by making other changes, rather than by permanently increasing total end strength.

Table 1: Force Structure

	1990	2000	**2005**
Army			
Active Divisions	18	10	**10**
Reserve Personnel	736,100	555,826	**555,000**
Navy			
Active Carriers/Training	15 / 1	11 / 1	**12**
Attack Submarines	97	55	**55**
Ships	546	316	**290**
Active Wings/Reserve	13 / 2	10 / 1	**10 / 1**
Air Force			
Active Wings	24	13	**12+**
Reserve Wings	12	7.6	**7+**
Marine Corps			
Active/Reserve Divisions	3 / 1	3 / 1	**3 / 1**

RESEARCH AND DEVELOPMENT

The FY 2005 defense budget request includes a $4.2 billion increase in funding for R&D. This boost, coming on top of similarly large increases over the past three years, would bring DoD's R&D budget to $68.9 billion, its highest level ever. This is $27.3 billion, or 57 percent more than was provided in FY 2001 and 21 percent above the level provided in FY 1987, the Cold War peak for defense R&D. Under the administration's plan funding for defense R&D would grow to about $69.8 billion (FY 2005 dollars) in FY 2006, before falling back down to $65.4 billion by FY 2009 period. Robust funding for R&D is probably appropriate, given the need to transform the US military, and the likelihood that in the future the US military will face challenges that are significantly greater than and different from those it faces today. But whether increases of this magnitude are needed, or whether the new R&D budget request emphasizes the most important priorities, is debatable.

Consistent with its public pronouncements, the Bush Administration has given top priority to the development of ballistic missile defense capabilities. Under its plan, $9.2 billion in R&D funding would be provided for the Missile Defense Agency (MDA) in FY 2005. This would mark a $1.5 billion increase from FY 2004 and almost $5 billion rise from FY 2001.

During the 2000 presidential campaign, then-candidate Bush argued that the US military must be transformed to counter effectively the very different kinds of challenges projected to emerge over the next several decades. The FY 2005 budget does contain R&D funding for several programs widely believed to be important for transformation. However, overall, defense R&D funding still appears to be very much focused on traditional kinds of weapons programs. For example, while the FY 2005 request includes $1.364 billion for the development of unmanned aerial vehicles (UAVs), it includes $5.3 billion for continued development of the Services' three

short-range fighter programs.[31] Moreover, no funding is provided in the request for long-range, stealthy UAVs. No one believes that the US military can or should be transformed overnight, but the magnitude of the tilt in this budget toward traditional systems may be inconsistent with an effective transformation strategy.[32] The allocation of funding among DoD's various R&D budget activities also raises questions about the priority given to transformation in the FY 2005 budget request.

The DoD R&D budget is broken down into six different budget categories primarily reflecting different phases of the R&D process. The S&T budget includes programs in the three earliest phases of R&D.[33] The discovery and development of new technologies promising major leaps in military capability are most likely to be made in these early phases of R&D. As a result, many advocates of military transformation believe that S&T programs should be given a high priority. The administration's plan includes $10.6 billion for S&T programs in FY 2005. This is $1.5 billion less than was provided in FY 2004 and only about 12 percent more than was provided in FY 2001. This level of growth is extremely modest compared to the increases the administration has requested for R&D overall, or for specific programs, such as BMD and fighter development over this same period.

Programs in the system development and demonstration (SDD) phase have been given the largest increases in funding since FY 2001. SDD is the last phase of R&D prior to production, as well as the most costly phase for most programs. Under the administration's plan, $19.3 billion would be provided for SDD programs in FY 2005, a $3.4 billion jump from FY 2004. Altogether, funding in this category would grow by about $10.9 billion, or 116 percent between FY 2001 and FY 2005.

During the 2000 presidential election, then-candidate Bush argued that the US military should modernize its military "selectively," but that the real goal should be to "move beyond marginal improvements—to replace existing programs with new technologies and strategies: to skip a generation of technology."[34] These goals were essentially reaffirmed in the 2001 Quadrennial Defense Review (QDR). After a series of program reviews, however, the administration appears to have largely abandoned this approach. Over the past few years, it has cancelled several major acquisition programs, including the $11 billion Crusader artillery system, the $9 billion Navy Area Missile Defense program and, most recently, the $38 billion Comanche helicopter

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[31] This figure includes total R&D funding for the Services' three major fighter programs, the JSF, the F-22 and the F/A-18E/F.

[32] Another concern of some transformation advocates is that even the funding provided for UAVs is focused on the development of systems that are non-stealthy and, with the exception of Global Hawk, relatively short-range. Like manned fighters, short-range UAVs might prove ineffective in an anti-access environment.

[33] S&T programs consist of those funded through the Basic Research, Applied Research and Advanced Technology Development budget activities.

[34] George W. Bush, Speech on Defense Policy, The Citadel, Charleston, SC, September 23, 1999.

program.[35] However, the administration is continuing to move ahead with the vast majority of the major weapons platforms included in the plans it inherited from the Clinton Administration.

The dramatic growth in SDD funding projected in DoD's latest plan essentially reflects this decision. The many long-planned, next-generation programs currently undergoing SDD, include the F-35 Joint Strike Fighter (JSF), the DD(X) destroyer and the Future Combat System (FCS).

The administration and the Services claim that most SDD funding is focused on transformational systems, or are at least programs consistent with a sound transformation strategy. If so, this boost in SDD funding may be appropriate. But at least some of the weapons programs being pushed into SDD appear ill-suited for the emerging security environment. Perhaps most questionable is the administration's decision to continue to move ahead with all three planned tactical fighter programs. This focus on relatively short-range tactical fighters seems at odds with recent experience in Iraq, Afghanistan and elsewhere which suggests that, in the future, the US military may often have difficulty obtaining access to forward bases. Arguably, a better approach would be to shift some of the funding allocated to SDD programs to earlier phases of the R&D process, and to focus more on the development of long-range weapon systems.

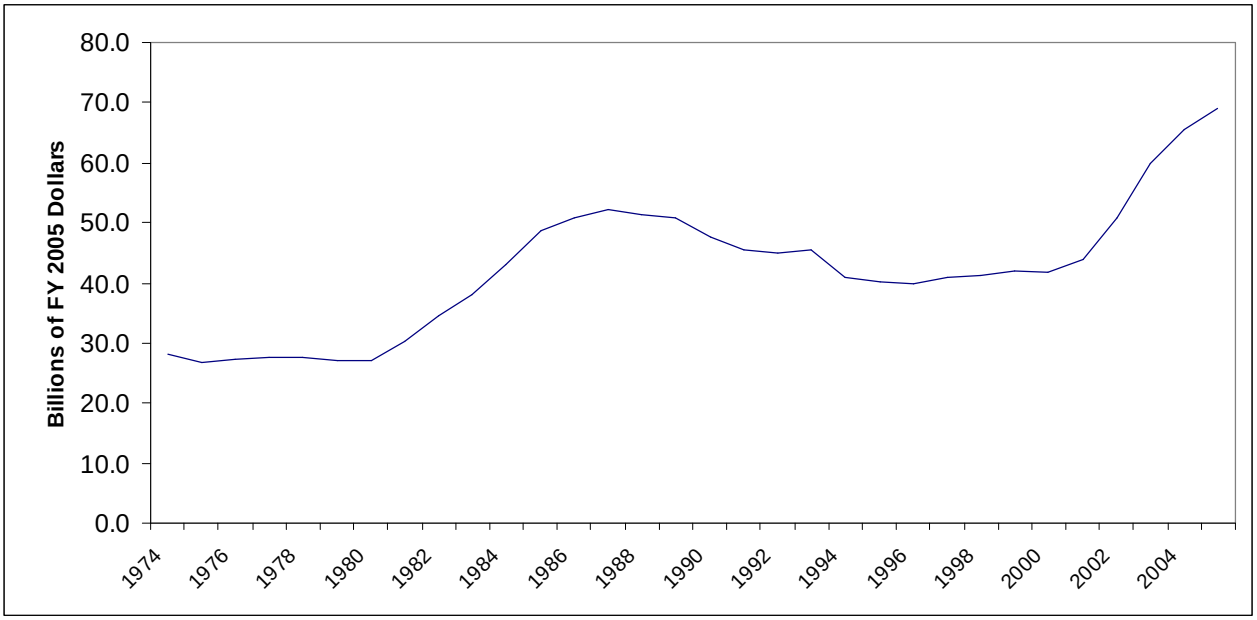
Perhaps the greatest problem with the administration's decision to move ahead with so many costly traditional programs today is that it might make it impossible to increase funding for more transformational kinds of systems several years down the road, when their feasibility and potential is better proven and they are ready to be moved beyond the early stages of R&D. This is because the level of funding absorbed by traditional weapon systems entering SDD today will grow significantly over the next five years or more, as they move further through the SDD process and into production—potentially crowding out promising, emerging transformational programs.

The above discussion focuses primarily on the question of how appropriately R&D funding is allocated among various budget categories in the administration's FY 2004 request. An equally important question is whether the total funding level requested for R&D is appropriate. Robustly funding R&D probably makes sense, given the need to transform the US military, and the likelihood that the future challenges facing the US military will be significantly greater than—and different from—those it faces today. On the other hand, the level of funding requested by the administration may be higher than necessary to modernize or transform the US military adequately. As noted earlier, the requested level of funding for R&D is some 21 percent above the previous peak of FY 1987. But unlike FY 1987, when the United States faced—in the Soviet Union—a peer competitor that spent as much as $50 billion a year on defense R&D, today no potential US adversary spends even close to that amount. This does not necessarily mean that defense R&D funding should be reduced. To the extent that modernizing and transforming the US military represents a cost-effective means of improving US capabilities, especially capabilities to counter new kinds of threats, relatively high levels of spending on R&D may make sense, even if potential adversaries are not modernizing their own forces as rapidly as in the past. But the slower pace at which most potential adversaries appear to be modernizing their

[35] Prior to the program's cancellation, DoD plans called for buying a total of 650 Comanche helicopters. A total of about $8 billion has been spent on this program to date.

forces does at least raise questions about the need for such high levels of funding for defense R&D.

Figure 1: R&D Funding



The FY 2005 budget request provides $74.9 billion for weapons procurement. This is roughly the same level of funding approved in the FY 2004 annual defense appropriations act. (Including funding provided in the FY 2004 emergency supplemental appropriations act, the FY 2005 request represents a $6 billion decline.[36]) Under the administration's plan, funding for procurement is projected to increase to about $106 billion (FY 2005 dollars) by FY 2009. It is widely agreed that funding for procurement needs to be increased. But, as in the case of R&D, there is less agreement concerning just how much funding needs to be provided for procurement and how those funds should be invested.

As noted earlier, during the 2000 presidential campaign, then-candidate Bush suggested that it might make sense for the US military to "skip a generation" of planned new weapon systems, and focus resources on developing and later producing new kinds of weapon systems that would be better suited to fighting the new and different kinds of threats likely to emerge in the future. Although the specifics of this strategy were never spelled out, it also appeared to involve placing greater reliance on less costly current-generation systems (both modifications and upgrades of existing systems, and new production of current-generation systems). In addition, during the QDR process, the administration apparently considered the possibility of making some cuts in the size of the US military's force structure (e.g., number Army divisions and Navy carrier battle groups), as a way of paying for some of the needed increase in procurement funding.

[36] Since it is virtually certain that an emergency supplemental will eventually be enacted to cover the FY 2005 costs of military operations in Iraq and elsewhere, and that this measure will include additional procurement funding, this comparison is somewhat misleading.

In the end, however, the administration opted to embrace, with a few modifications, essentially the same modernization plan it inherited from the previous administration. Few major weapons programs were cancelled or substantially scaled back, and no offsetting reductions in force structure were offered. Estimates provided by CBO suggest that implementing the administration's current modernization plan would require increasing procurement funding to an average of roughly $110-135 billion (FY 2005 dollars) annually over the FY 2010-22 period.[37] The lower figure assumes that the Services would be relatively successful at meeting their current cost goals for new weapons programs, while the higher figure assumes that, consistent with historical experience, most next-generation weapon systems would end up costing substantially more to procure than projected by the Services.

If the lower estimate is correct, the level of procurement funding projected in the administration's plan would appear to be roughly adequate, at least by FY 2009. But if, as history suggests is more likely, the higher estimate is correct, even the substantial increase in procurement funding projected in the administration's latest plan would fall some $30 billion a year short. Moreover, as noted earlier, the plan's assumptions about O&M cost growth may be optimistic. If O&M costs continue to grow at their historical rate over the coming five years, DoD may find itself with little choice but to forgo the rise in procurement funding and use the money instead to cover readiness-related costs.

In any case, the fact that implementing the administration's modernization plan would require increasing funding to $110-135 billion a year does not necessarily mean that adequately modernizing US forces would require increases of this magnitude. The administration's current approach is but one of several different possible approaches to modernization. At the most basic level, there are essentially three different means by which forces can be modernized:

- Existing current-generation systems (e.g., F-15 and F-16 fighters) can be replaced with next-generation weapons systems (e.g., the F/A-22 and JSF, respectively). Next-generation weapons systems are likely to display the most dramatic improvements in capabilities. But they are also by far the most expensive systems to produce—typically costing at least twice as much as the systems they are intended to replace.

- Existing current-generation systems can be replaced with the latest versions of the same systems (e.g., old F-16s replaced with the latest versions of the F-16 now being produced). Often the latest versions of these systems are far more capable than the earlier versions they would replace. According to the Air Force, the latest F-16s, for example, are as much as five times more effective than the earliest version of the F-16.[38] These systems also tend to cost much less to produce than next-generation systems. For example, the Air Force version of the JSF appears likely to cost about twice as much as the latest F-16s.

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[37] These estimates were derived by CSBA based on data provided by CBO in *The Long-Term Implications of Current Defense Plans: Detailed Update for Fiscal Year 2004*, February 2004, pp. 7-8.

[38] "F-16 Celebrates 25 Years of Flying High," Air Force Press Release, February 22, 1999, p. 2.

- Existing current-generation systems can be upgraded with new electronics and other equipment, and have their service lives extended (e.g., older AV-8B Harrier short take-off vertical landing aircraft can be upgraded to the most modern AV-8B standards). For example, according to one estimate, incorporating a new data link in existing F-15s, which would allow aircraft to share target information, could yield a five-fold improvement in air-to-air kill ratios.[39] The cost of upgrade and modification efforts varies greatly, depending on how extensive the efforts are, but overall costs tend to be even less than the cost of buying new current-generation systems.

The administration's plan includes a mix of these different approaches. But it is heavily weighted toward the first approach: the acquisition of next-generation systems. Thus, not surprisingly, its funding requirements are very high. An approach that included the purchase of some next-generation weapons systems, but focused relatively more on the production of new current-generation systems, and upgrades of existing systems—perhaps similar to the skip-a-generation approach that was considered, but largely rejected, by the Bush Administration—might cost substantially less. The administration's decision to cancel the Comanche reconnaissance/light-attack helicopter program, announced at the end of February, well illustrates the potential advantages of shifting funding from new, next-generation systems to the production of current-generation systems, and modifications and upgrades of existing systems. According to DoD officials, the $14 billion cut from the Comanche program over the FY 2005-11 period (which was to have been used to buy 121 Comanche helicopters) will be sufficient to fund the purchase of some 800 new UH-60 Blackhawk (utility) and other helicopters, and modify and extend the lives of some 1,400 existing helicopters.[40]

Another option would be to move ahead with procurement of the next-generation weapon systems called for under current plans, but to offset the high cost of these plans by making cuts in the size of the force structure. This would be consistent with earlier decisions to tradeoff quantity for quality. Given the large number of troops currently deployed in Iraq and the likelihood that substantial US forces will need to remain there for some number of years, making cuts in the Army may not be feasible in the near term. However, over the longer term some such cuts may be possible. And in the shorter term, it may be feasible to make at least modest cuts in some of the other Services (e.g., in the number of Air Force tactical fighter wings). Viewed from a long-term perspective, DoD's past modernization efforts have often been financed in part by cuts in the size of the military. Still another option would be to combine cuts in next-generation weapons programs with force structure cuts. In this case, annual procurement funding requirements could fall well below the levels required to pay for the current plan.

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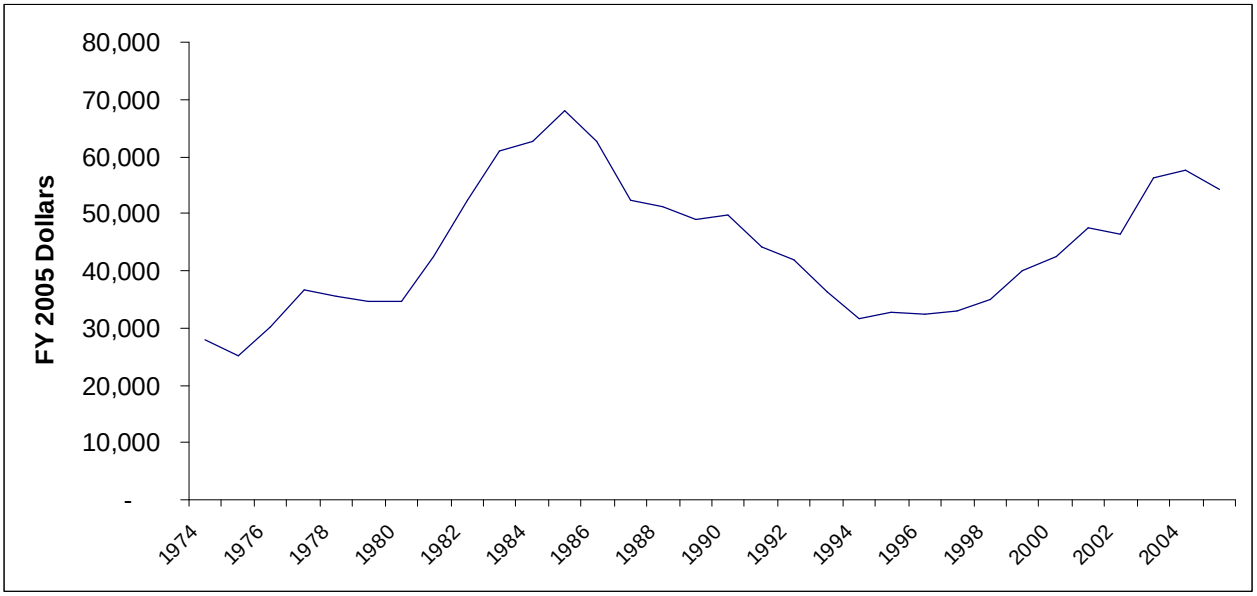
[39] Report of the House Committee on Appropriations, Department of Defense Appropriations Bill, 2000 (Government Printing Office, July 29, 1999), p. 19.

[40] Douglas Harpel, "Axe Falls On Comanche as US Army Outlines Aviation Restructuring," *Defense Systems Daily*, February 24, 2004.

Figure 2: Procurement Funding Per Troop



In short, there is no single right answer to the question of how much the United States must spend to modernize its military—the answer depends on the kind and rate of modernization that is believed to be necessary. In turn, one's answers to these questions are likely to be influenced by views concerning a broad range of other, largely non-budgetary, issues, including: the strategy and missions of the US military; the pace of modernization among potential adversaries; changes in expected standards of performance for US forces; the nature and pace of advances in weapons platform design and propulsion, precision-guided munitions (PGMs), computers, sensors and communications technologies; and the impact and implications of the RMA. Reasonable minds can, and do, differ greatly on these questions. For example, some observers believe that the projected aging of the Services' inventories of aircraft, ships and other weapons platforms could greatly reduce the effectiveness of the US military, while others believe that even relatively old platforms can be kept highly effective through the incorporation of new electronics and PGMs.

MISSILE DEFENSE

The Bush Administration's FY 2005 defense budget request includes about $10.2 billion for BMD programs. This includes $9.2 billion provided through the Missile Defense Agency and $1.0 billion funded through the Services' budgets. This is roughly $1.2 billion more than was provided for BMD programs in FY 2004, and some $4.8 billion more than was appropriated for FY 2001.

The $10.2 billion figure includes funding both for the development of national missile defense (NMD) systems, designed to protect the United States from strategic ballistic missile attack, and the development and deployment of theater missile defense (TMD) systems, intended to protect forward-deployed US forces against shorter-range ballistic missiles. The Bush Administration has not only significantly increased funding for BMD programs, over the past several years, it has also taken a different approach in allocating that funding.

Under the Clinton Administration, BMD efforts were focused on the development and near-term deployment of a variety of TMD systems, and the development and deployment (at some future date) of a limited NMD system. The Clinton Administration believed that the Anti-Ballistic Missile (ABM) Treaty—by which the United States and the Soviet Union (now Russia) agreed to limit the development and, especially, deployment of NMD systems—still had an important role to play in maintaining a stable nuclear balance between the United States and Russia, as well limiting the incentive for China to buildup its strategic nuclear forces. As a result, while its proposed NMD system conflicted with the ABM treaty in a number of ways, the Clinton Administration hoped to get around this problem by gaining Russian agreement to modify the treaty, rather than by withdrawing from it.

By comparison, President Bush has made the near-term deployment of an NMD system a more urgent priority. The administration withdrew the United States from the ABM Treaty at the end of 2001, on grounds that it would preclude the development and deployment of effective defensive systems. The administration's latest plan calls for deploying a modest NMD capability, beginning with the activation of several ground-based interceptors (GBI) based in Alaska in the fall of 2004, to protect against a possible North Korean threat. By the end of FY 2005, the administration expects to have deployed a total of 20 GBI and 10 sea-based interceptors aboard three Navy Aegis (air defense) ships. Over the longer term, the administration projects the development and deployment of a larger, layered NMD system that might include space-based interceptors as well.

The administration's FY 2005 request for MDA programs includes $4.385 billion for the Midcourse Defense Segment, $493 million for the Boost Defense Segment, $592 million for BMD sensor programs, and $834 million for the Theater High-Altitude Area Defense (THAAD) system.

Whatever the merits or shortcomings of the Bush Administration's approach to BMD on technical or strategic grounds, pursuing this course will likely require a substantial and sustained increase in funding. The cost of developing and deploying a multi-layered NMD system could be especially high. In January 2002, CBO estimated that developing, deploying and operating a single-site NMD system similar to the one proposed by the Clinton Administration would require spending $23-25 billion through 2015, while a three-site system could cost $56-64 billion.[41] Likewise, CBO estimated that a stand-alone sea-based system would cost $43-55 billion and a space-based system might cost $56-68 billion.[42]

This potentially high cost of pursuing a multi-layered NMD system does not necessarily mean that the administration's missile defense plans are unaffordable. In the context of an overall defense budget exceeding $400 billion a year, spending $10.2 billion or even significantly more on BMD programs should be manageable. However, doing so may make it difficult for the

[41] CBO, "Estimated Costs and Technical Characteristics of Selected National Missile Defense Systems," Letter to the Honorable Thomas A. Daschle, Majority Leader, United States Senate, January 31, 2002, p. 23.

[42] Ibid. CBO noted that the stand-alone sea-based system includes some elements common to the ground-based system. Thus simply adding together the estimates for the ground- and sea-based systems would overstate the total cost of buying and operating both systems.

administration to fund other new initiatives, including efforts aimed at transforming various elements of the US military.

MAJOR ACQUISITION PROGRAMS

(See Appendix, Table 5)

Air Force

The Air Force's FY 2005 budget request includes $32.6 billion for procurement and $21.1 billion for R&D.

F/A-22: The budget request includes $4.157 billion to procure 24 Lockheed-Martin F/A-22 fighters, plus $565 million for continued development of the aircraft. Originally designed to replace the Air Force's existing fleet of F-15 air superiority fighters, the F/A-22 is now intended to carry out ground attack missions as well. The F/A-22 has experienced significant cost growth over the years, and OMB recently requested that the Air Force conduct a formal review of the program. Under current plans, the Air Force plans to buy 278 F/A-22 fighters for about $72 billion. However, the number ultimately purchased will depend on the results of the latest review and, in particular, whether the Air Force can successfully keep program costs under control.

F-35 Joint Strike Fighter: The proposed FY 2005 budget would provide $4.572 billion for the JSF. In 2001, Lockheed Martin Corporation defeated the Boeing Company in a competition to develop and produce the JSF. This year's request includes $2.265 billion in Air Force and $2.307 billion in Navy funding for the program, which is intended to lead eventually to the fielding of a family of affordable fighter aircraft to be used by the Air Force, Navy and Marine Corps. Previously, President Bush had expressed some doubts about the wisdom and affordability of moving ahead with all three of the Services, new tactical fighter programs (the F-35, the F/A-22 and the F/A-18E/F). Ultimately, the administration decided to buy the JSF and continue with both of the other two aircraft programs as well. Altogether, current plans call for buying a total of some 2,457 JSF for a cost likely to exceed $200 billion.

B-2: The administration is requesting $341 million for the B-2 strategic bomber program in FY 2005, primarily for the development of modifications and upgrades for the existing fleet of 21 aircraft. In the 2001 QDR, the administration indicated that it believed that greater emphasis should be placed on long-range precision-strike capabilities. This conclusion, combined with the important role played by bombers in the conflict in Afghanistan, suggested to some that the administration might propose to reopen the B-2 bomber production line. However, in the end, the administration decided to forego the production of any additional B-2 bombers. Under current plans, no new bombers would be developed or produced for several decades.

Unmanned Vehicles: The FY 2005 request includes $1.973 billion in acquisition-related funding for six different UAV programs. This represents about a $633 million increase from FY 2004. More than one-third of this funding ($696 million) is for the Global Hawk program. The Global Hawk is a long-range reconnaissance UAV. Although still not entirely through the R&D process, the Global Hawk has already been used successfully in Afghanistan and Iraq. Other UAV programs funded in the request include the Predator (Air Force), Shadow (Army), Fire

Scout (Navy), and Broad Area Maritime (Navy) programs, which would be provided a total of some $441 million. In addition, the request includes $710 million to develop a combat UAV (J-UCAS), as well as $127 million for acquisition of an unmanned underwater vehicle (UUV) for the Navy.

C-17: The administration's request includes $4.04 billion for the C-17 program in FY 2005, including $3.84 billion for the procurement of 14 of the intercontinental-range cargo aircraft and $200 million for further R&D. To date, the Air Force has procured 138 C-17s. Originally, the Air Force had hoped to buy a total of 210 C-17s. The number was later reduced to 120 aircraft. Under the latest plan, however, a further 60 C-17s are now projected to be procured. Reflecting this change, total acquisition costs have increased to about $60 billion for the program. Eventually, if possible, the Air Force would like to buy as many as 222 C-17s.

KC-767: Last year, Congress and the administration decided to move ahead with a controversial plan to lease 20 new KC-767 Boeing tanker aircraft and to buy 80 additional aircraft over the coming decade. Originally the Air Force had wanted to lease all 100 aircraft. But studies by CBO, the General Accounting Office (GAO) and the Congressional Research Service (CRS) found that doing so would cost $5-6 billion more than simply purchasing the aircraft outright. CBO has estimated that the compromise plan ultimately agreed to would save $3.2-5.3 billion, compared to the original proposal.[43] Presently, however, the plan has been put on hold by DoD, pending the results of an ethics investigation concerning how the arrangement was negotiated between the Air Force and Boeing, as well as a review of tanker requirements. If the plan survives those reviews, DoD would need to shift funds from elsewhere in the budget to cover its FY 2005 costs, because DoD did not include any specific funding for the program in its request.[44]

Space-Based Infrared System (SBIRS)-High: The FY 2005 budget request includes $508 million for the SBIRS-High program. The goal of this program is to field a constellation of satellites to provide improved warning of ballistic missile strikes (replacing existing Defense Support Program satellites), as well as support national missile defense and intelligence collection efforts. The first launch of a SBIRS-High satellite is scheduled for 2007.

Navy

The Navy's FY 2005 budget request includes $27.7 billion for procurement and $16.3 billion for R&D.

F/A-18E/F: The administration is requesting $3.12 billion for the F/A-18E/F aircraft program in FY 2005, including $135 million for continued development and $2.986 billion to procure 42 aircraft. In production since FY 1997, the F/A-18E/F is a substantially changed derivative of the older A-D versions of the F/A-18, featuring, among other things, a longer fuselage and larger

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[43] Amy Belasco and Stephen Daggett, "Authorization and Appropriations for FY 2004: Defense," CRS, December 9, 2003, pp. 8-10.

[44] Tony Capaccio, "New Boeing Tanker Lease Delay: Controversial Deal Is Undergoing Three Separate Reviews," *Seattle Post-Intelligencer*, February 5, 2004, p. 2.

wings. Current plans call for the Navy to buy 552 of these carrier-based aircraft at a total cost of about $51 billion. However, the total number of F/A-18E/Fs ultimately procured could be higher if the JSF were to develop technical problems, could not meet its cost goals, or suffer significant slippage in its schedule.

V-22: The proposed budget would provide $395 million in R&D funding for the V-22 tilt-rotor, vertical take-off and landing aircraft plus $918 million in procurement funding to buy eight Marine Corps versions of the aircraft (MV-22) and $443 million for three Air Force versions of the aircraft (CV-22). The V-22 program has suffered from some significant technical problems and cost growth in recent years. Nevertheless, the administration has decided to move ahead with the program. Under the current plan, V-22 production would be limited to the "minimum sustaining rate" as the program continues to make its way through the R&D and flight testing process. Ultimately, the Marine Corps plans to buy a total of 360 MV-22s, while the Air Force expects to buy 50 CV-22s, and the Navy plans to purchase 48 HV-22s. The MV-22 is intended to replace the Marine Corps' CH-46 and CH-53 helicopters. The CV-22 would be used for special operations forces (SOF) and the HV-22 would be used for search and rescue.

DDG-51: The administration's FY 2005 request includes $3.445 billion for the procurement of three DDG-51 Arleigh Burke-class guided missile destroyers, as well as $147 million for R&D. These are the last three DDG-51s the Navy plans to purchase.

DD(X): The Navy plans to begin construction of the first of this new class of surface combatant in FY 2005. Unlike the DDG-51, which is focused primarily on the air defense mission, the DD(X) is intended to be a multi-mission combatant with a substantial land-attack capability. Navy plans call for buying the first DD(X) in FY 2005, constructing the second and third ships in FY 2007 and increasing the production rate to three ships per year by FY 2009. The FY 2005 request includes $1.451 billion for DD(X) acquisition. This first ship is to be purchased with R&D funding, rather than—as is traditional—procurement funding.

Littoral Combat Ship (LCS): In addition to the DD(X), the FY 2005 request includes funding for the acquisition of a second new class of surface combatant. The LCS is intended to focus on the kinds threats likely to be confronted in coastal waters, such as mines, diesel submarines and "swarming attacks" by small boats. The FY 2005 request includes $352 million for the LCS program. As in the case of the DD(X), the Navy plans to buy the first ship of this new class with R&D funding.

SSN-774: The administration's FY 2005 request includes $2.453 billion in procurement funding for one Virginia-class attack submarine, plus $143 million for R&D. This class of submarines is being built jointly by Electric Boat of General Dynamics, Groton, CT, and Newport News Shipbuilding (NNS) of Newport News, VA. Under the administration's new defense plan, the Navy would buy one Virginia-class submarine a year through FY 2008 and two boats per year beginning in FY 2009. Ultimately, the Navy hopes to buy 30 SSN-774s at a total cost of about $82 billion.

LPD-17: This year's request includes $967 million to procure a seventh LPD-17 class amphibious transport ship. Navy plans call for procuring one LPD-17 per year over the FY 2006-

09 period. Altogether, the Navy plans to purchase a total of 12 ships of this class for some $16 billion.

SSGN Conversions: Beginning with the FY 2003 defense budget, the administration included funding to convert four Trident ballistic missile submarines to guided missile submarines. Absent such conversions, these submarines were slated for retirement (though they have 20 years of service life remaining in their hulls). When converted, each of the four SSGNs will be capable of carrying over 150 long-range Tomahawk cruise missiles. The FY 2005 request would provide a total of $658 million for this program, including $638 million in procurement funding to fund the conversion of the last of the four boats.

CVN-21: Under the administration's defense plan, $626 million in R&D and $353 million in advance procurement funding would be provided for the CVN-21, the lead ship of a new class of aircraft carrier. Full funding for the ship is projected for FY 2007. In 1998, the Navy decided to adopt an evolutionary approach to designing this new class of aircraft carrier. Under this plan, the first ship of this class will closely resemble existing Nimitz-class carriers, although succeeding ships might differ substantially from that class.

Army

The Army's FY 2005 budget request includes $11.7 billion for procurement and $10.4 billion for R&D.

Longbow Apache: The FY 2005 budget request would provide $555 million for the Longbow Apache upgrade program. Under the Longbow Apache program, a portion of the Apache fleet will be equipped with a mast-mounted fire control radar, and all of the existing Apaches will be upgraded to carry the radar-frequency fire-and-forget version of the Hellfire missile.

UH-60: The FY 2005 budget includes $125 million for the procurement of eight Blackhawk UH-60 utility helicopters, plus $68 million for R&D.

Interim Armored Vehicle (IAV): The "Stryker" IAV program represents a key element in the Army's transformation plans. The Stryker is intended to provide a relatively light and easily deployable combat vehicle to bridge the gap between today's lethal, but relatively heavy forces, and the more capable and deployable systems being developed under the Future Combat System (FCS) program—which is expected to lead to the fielding of new capabilities starting around 2010. The FY 2005 request includes $52 million for R&D and $905 million in procurement funding to buy 310 Stryker vehicles.

Future Combat System (FCS): Through the FCS program, the Army plans to develop a family of combat vehicles and other systems with which to equip the Army's "Future Force"—the Army projected for 2010 and beyond. This force is expected to be both more deployable than today's forces and more lethal and survivable than the interim forces presently being procured. The FY 2005 budget request includes $3.198 billion in R&D funding for the FCS program.

M-1 Tank: The budget request provides $308 million to upgrade older M-1 Abrams tanks to the M-1A2 model. The modifications include improved armor, a 120mm gun, infrared sensors and digitized communications.

Bradley Fighting Vehicle (BFV): The FY 2005 budget request includes $71 million to fund upgrades to existing BFVs. The upgrades include modifying first- and second-generation BFVs to the current M2A2 configuration, as well as a M2A3 upgrade program. M2A3 upgrades include enhanced command and control capabilities, and lethality and survivability improvements.

MILITARY CONSTRUCTION AND FAMILY HOUSING

The administration is requesting $5.3 billion for military construction and $4.2 billion for family housing in FY 2005. This is less than was provided on average during the 1990s. According to the administration, funding for military construction should be kept at relatively low levels until after 2005, when a new round of base closures is scheduled to begin. It argues that substantially increasing funding prior to 2005 does not make sense because it might lead to spending money on many bases that could be closed a short time later. Under the administration's plan, military construction funding would, however, be increased dramatically after FY 2005, reaching $8.8 billion in FY 2006 and $12.1 billion in FY 2007. As noted earlier, the FY 2005 request would also eliminate all out-of-pocket expenses for service members related to off-base housing.

DEPARTMENT OF ENERGY DEFENSE (DOE) ACTIVITIES

The administration's FY 2005 request would provide $17.2 billion for atomic energy defense activities. This represents about a $467 million increase from FY 2004. The request includes $6.6 billion for weapons activities and $7.7 billion for defense environmental restoration, waste management and other activities. The request would also provide $1.3 billion for non-proliferation programs and $798 million to support naval nuclear reactor programs. About $9.0 billion of DoE funding would come under the purview of the National Nuclear Security Administration, which was established in the FY 2000 defense authorization act, among other things, to improve management and security at DoE weapons labs.

III. CONCLUSION

The administration's FY 2005 defense budget request continues the build up in funding for defense begun in the late 1990s and accelerated after the terrorist attacks of September 11, 2001. The request should be adequate to cover the FY 2005 costs of DoD's modernization plans, and peacetime manning and operations and support activities. However, an additional $30-50 billion will eventually have to be provided to cover the FY 2005 cost of US military operations being carried out in Iraq, Afghanistan and elsewhere. Under the administration's plan, funding for defense is projected to continue to grow through FY 2009, when the defense budget would be about 23 percent above average Cold War levels and above even the levels sustained during the 1980s, the decade of the Reagan buildup.

However, even these budget levels are unlikely to prove sufficient to pay for DoD's long-term force structure, modernization and readiness plans. If history is any guide, operations and support costs and DoD's modernization plans are likely to prove substantially more costly to execute than assumed by the administration. Studies conducted by CBO, CSBA and others suggest that fully implementing DoD's plans, over the long-term, could require increasing funding for defense by as much as an additional $70 billion a year—beyond the levels called for in the administration's current plan.

On the other hand, sustaining even the level of funding increases projected for defense in the administration's latest budget will be difficult. The long-term federal budget picture has dramatically worsened over the past two years. In early 2001, CBO projected a 10-year surplus of about $5.6 trillion over the FY 2002-11 period. By contrast, CBO's baseline estimate now projects ***deficits*** totaling $2.012 billion over the next decade (FY 2005-14). The change in the government's fiscal outlook has resulted from the enactment of large tax cuts, as well as a weak economy and other factors.

Unfortunately, it is likely that the outlook will deteriorate still further in coming years. In its latest request, the administration has proposed additional tax cuts and spending increases. If enacted these changes could increase total deficits to at least $2.75 trillion over the FY 2005-14 period, and quite possibly to $2.6 trillion or more. Moreover, the fiscal outlook is likely to deteriorate even more dramatically after the "baby boomer" generation begins retiring towards the end of the decade. In this environment, strong pressure may emerge to slow, or perhaps even reverse, the continued growth in funding for defense projected in the administration's plan.

This means that in coming years pressure will grow for DoD to scale back its plans. More actions like the recent cancellation of the Army's Comanche helicopter program will likely have to be taken. There is good reason to believe that by adopting a scaled-back and more transformation-oriented defense plan the United States could avoid (or offset) much of the cost growth that is otherwise projected in DoD's plans, by CBO and others, and still adequately meet its security requirements. However, so long as a large US military presence is required in Iraq and elsewhere, it will be difficult or impossible to make reductions in some programs and activities—especially Army force structure.

Alternatively, a decision could be made to address the ballooning budget deficit solely through reductions in domestic and entitlement (e.g., Social Security and Medicare) spending, or tax increases, leaving current defense plans unaffected. But such a choice would be politically difficult and, based on history, seems unlikely. In any case, whatever path is selected, effectively addressing the growing cost of DoD's plans and the growing size of the federal deficit, will require making some very hard decisions. And the sooner those decisions are made the less painful they will be to carry out.

APPENDIX

Table 1

National Defense Budget Authority and Outlays*
(in billions of current dollars)

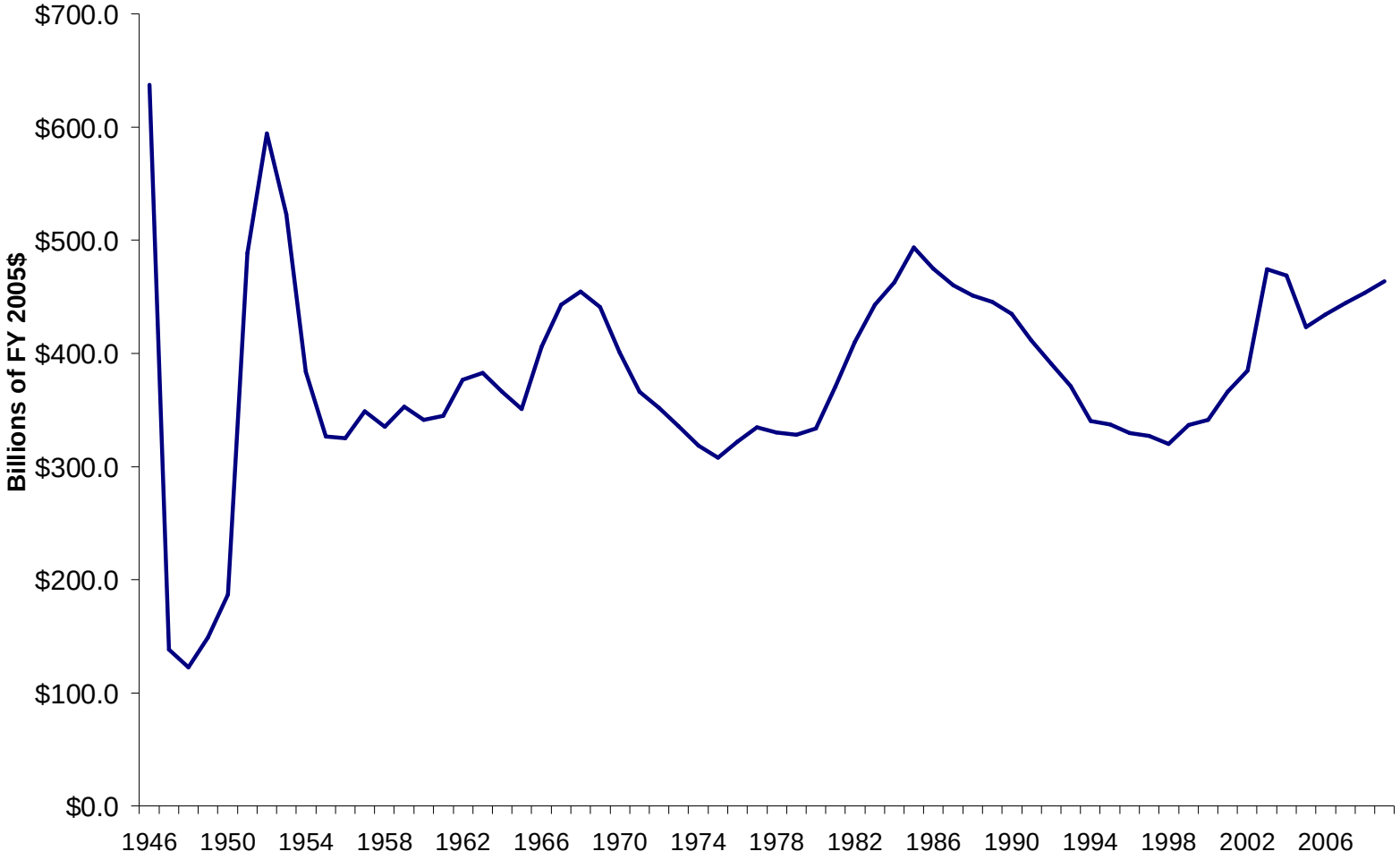
	FY 80	~	FY 85	~	FY 90	~	FY 95	~	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY08	FY 09
Budget Authority																				
DoD (051)	140.7		286.8		291.0		255.7		258.5	278.5	290.4	319.4	345.0	437.9	441.7	402.6	423.7	444.9	466.8	488.9
DoE & Other	3.2		7.9		10.3		10.7		12.8	13.8	13.7	16.0	17.1	18.3	18.8	20.5	20.4	19.9	19.1	19.3
National Defense (050)	143.9		294.7		301.2		266.4		271.3	292.3	304.1	335.5	362.1	456.2	460.5	423.1	444.0	464.8	485.8	508.2
annual real change	NA		NA		NA		NA		NA	*5.2%*	*1.4%*	*7.3%*	*5.1%*	*23.3%*	*-1.2%*	*-9.8%*	2.7%	2.3%	2.1%	2.1%

	FY 80	~	FY 85	~	FY 90	~	FY 95	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY08	FY 09
Outlays																			
DoD (051)	130.9		245.2		288.3		258.4	256.1	261.3	281.2	291.0	332.0	387.3	434.8	429.6	415.6	426.9	447.6	467.9
DoE & Other	3.1		7.6		9.6		12.6	12.3	13.6	13.3	14.5	16.6	17.6	18.9	21.0	20.6	20.2	19.4	19.3
National Defense (050)	134.0		252.7		297.9		271.0	268.4	274.9	294.5	305.5	348.6	404.9	453.7	450.6	436.1	447.1	467.1	487.2
annual real change	NA		NA		NA		NA	NA	*0.5%*	*4.2%*	*0.6%*	*11.0%*	*13.8%*	*9.6%*	*-2.3%*	-5.1%	0.3%	2.1%	1.9%

Source: CSBA, February 2004. Based on OMB, CBO and DoD data.
*Totals *exclude* funding for the 1991 Gulf War and related allied cash contributions.

Graph 1

National Defense Budget Authority FY 1946-2009*



Source: CSBA, February 2004. Based on OMB, DoD and CBO data.
*Excludes funding for the 1991 Gulf War and related allisd cash contributions.

Table 2

National Defense (050) Budget Authority, FY 1946-FY 2009*
(by fiscal year in billions of dollars)

	Current Dollars	*FY 2005 Dollars*	*% real change*		*Current Dollars*	*FY 2005 Dollars*	*% real change*
1946	44.0	637.7		1978	117.227	329.9	*(1.4%)*
1947	9.0	138.4	*(78.3%)*	1979	126.467	328.2	*(0.5%)*
1948	9.5	122.5	*(11.5%)*	1980	143.859	333.8	*1.7%*
1949	10.9	149.0	*21.6%*	1981	180.001	370.9	*11.1%*
1950	16.5	187.2	*25.6%*	1982	216.547	410.2	*10.6%*
1951	57.8	488.8	*161.1%*	1983	245.043	443.0	*8.0%*
1952	67.5	594.3	*21.6%*	1984	265.16	462.8	*4.5%*
1953	56.9	522.8	*(12.0%)*	1985	294.656	493.9	*6.7%*
1954	38.7	383.8	*(26.6%)*	1986	289.2	475.0	*(3.8%)*
1955	32.9	326.7	*(14.9%)*	1987	287.427	460.2	*(3.1%)*
1956	35.0	325.1	*(0.5%)*	1988	292.008	451.3	*(1.9%)*
1957	39.4	348.8	*7.3%*	1989	299.567	445.5	*(1.3%)*
1958	40.0	335.1	*(3.9%)*	1990	301.2	435.1	*(2.3%)*
1959	45.1	352.8	*5.3%*	1991	296.2	411.6	*(5.4%)*
1960	44.3	341.1	*(3.3%)*	1992	287.7	390.8	*(5.0%)*
1961	45.1	344.5	*1.0%*	1993	281.076	371.2	*(5.0%)*
1962	50.2	376.6	*9.3%*	1994	263.332	340.3	*8.3%*
1963	52.1	382.9	*1.7%*	1995	266.389	337.1	*(1.0%)*
1964	51.6	365.9	*(4.4%)*	1996	266.186	329.5	*(2.2%)*
1965	50.6	350.6	*(4.2%)*	1997	270.366	327.3	*(0.7%)*
1966	64.4	405.8	*15.8%*	1998	271.3	320.2	*(2.2%)*
1967	73.1	442.8	*9.1%*	1999	292.34	336.8	*5.2%*
1968	77.8	454.5	*2.6%*	2000	304.136	341.4	*1.4%*
1969	78.5	441.1	*(3.0%)*	2001	335.473	366.2	*7.3%*
1970	75.3	401.0	*(9.1%)*	2002	362.106	384.8	*5.1%*
1971	72.7	365.9	*(8.7%)*	2003	456.185	474.4	*23.3%*
1972	76.4	351.8	*(3.9%)*	2004	460.547	468.8	*(1.2%)*
1973	79.1	335.8	*(4.6%)*	**2005**	**423.098**	**423.1**	***(9.8%)***
1974	81.5	318.4	*(5.2%)*	2006	444.016	434.5	*2.7%*
1975	86.2	307.7	*(3.3%)*	2007	464.787	444.6	*2.3%*
1976	97.3	321.9	*4.6%*	2008	485.812	453.9	*2.1%*
1977	110.2	334.7	*4.0%*	2009	508.15	463.6	*2.1%*

Source: CSBA, February 2004. Based on OMB, CBO and DoD data.
*Excludes funding for the 1991 Gulf War and related allied cash contributions.

Table 3

National Defense (050) Outlays, FY 1946-FY 2009*

(by fiscal year in billions of dollars)

	Current Dollars	*FY 2005 Dollars*	*% real change*		*Current Dollars*	*FY 2005 Dollars*	*% real change*
1946	42.7	647.7		1978	104.5	307.7	*0.1%*
1947	12.8	182.7	*(71.8%)*	1979	116.3	317.1	*3.1%*
1948	9.1	125.2	*(31.5%)*	1980	134.0	325.1	*2.5%*
1949	13.2	173.5	*38.5%*	1981	157.5	339.6	*4.5%*
1950	13.7	170.3	*(1.9%)*	1982	185.3	362.8	*6.8%*
1951	23.6	261.0	*53.3%*	1983	209.9	391.2	*7.8%*
1952	46.1	451.0	*72.8%*	1984	227.4	407.0	*4.0%*
1953	52.8	497.7	*10.4%*	1985	252.7	433.2	*6.5%*
1954	49.3	473.3	*(4.9%)*	1986	273.4	455.1	*5.0%*
1955	42.7	408.1	*(13.8%)*	1987	282.0	456.5	*0.3%*
1956	42.5	385.5	*(5.5%)*	1988	290.4	454.8	*(0.4%)*
1957	45.4	390.6	*1.3%*	1989	303.6	456.0	*0.3%*
1958	46.8	380.9	*(2.5%)*	1990	297.9	435.3	*(4.5%)*
1959	49.0	380.0	*(0.3%)*	1991	296.7	417.1	*(4.2%)*
1960	48.1	371.1	*(2.3%)*	1992	286.1	389.0	*(6.7%)*
1961	49.6	369.9	*(0.3%)*	1993	283.9	373.8	*(3.9%)*
1962	52.3	391.2	*5.8%*	1994	278.9	358.4	*(4.1%)*
1963	53.4	395.3	*1.0%*	1995	271.0	342.5	*(4.4%)*
1964	54.8	391.1	*(1.0%)*	1996	265.2	328.3	*(4.2%)*
1965	50.6	359.3	*(8.1%)*	1997	270.4	326.3	*(0.6%)*
1966	58.1	383.1	*6.6%*	1998	268.4	316.2	*(3.1%)*
1967	71.4	441.9	*15.4%*	1999	274.9	317.8	*0.5%*
1968	81.9	481.1	*8.9%*	2000	294.5	331.0	*4.2%*
1969	82.5	469.5	*(2.4%)*	2001	305.5	333.2	*0.6%*
1970	81.7	436.4	*(7.1%)*	2002	348.6	369.9	*11.0%*
1971	78.9	398.3	*(8.7%)*	2003	404.9	420.8	*13.8%*
1972	79.2	369.3	*(7.3%)*	2004	453.7	461.3	*9.6%*
1973	76.7	337.1	*(8.7%)*	**2005**	**450.6**	450.6	***(2.3%)***
1974	79.3	322.5	*(4.3%)*	2006	436.1	427.4	*(5.1%)*
1975	86.5	315.3	*(2.3%)*	2007	447.1	428.7	*0.3%*
1976	89.6	305.3	*(3.1%)*	2008	467.1	437.8	*2.1%*
1977	97.2	307.5	*0.7%*	2009	487.2	446.1	*1.9%*

Source: CSBA, February 2004. Based on OMB, CBO and DoD data.
*Excludes funding for the 1991 Gulf War and related allied cash contributions.

Table 4

Department of Defense (051) Budget Authority by Title*
(in billions of dollars)

	FY 80	~	FY85	~	FY 90	~	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY06	FY07	FY08	FY09
Current Dollars																							
Personnel	41.1		67.8		78.9		76.0	71.4	71.6	69.8	70.3	69.8	70.6	73.8	76.9	87.0	109.1	117.7	106.3	111.0	114.7	118.4	122.1
O&M	46.4		77.8		88.4		89.1	88.6	93.7	93.6	92.3	97.2	104.9	108.7	115.7	133.2	178.3	168.5	141.2	146.7	151.8	156.9	164.5
Procurement	35.3		96.8		81.4		52.8	44.1	43.6	42.6	43.0	44.8	51.1	55.0	62.6	62.7	78.5	80.9	74.9	80.4	90.6	105.1	114.0
RDT&E	13.6		31.3		36.5		37.8	34.6	34.5	35.0	36.4	37.1	38.3	38.7	41.6	48.7	58.1	64.7	68.9	71.0	70.7	71.6	70.7
Military Construction	2.3		5.5		5.1		4.6	6.0	5.4	6.9	5.7	5.5	5.4	5.1	5.4	6.6	6.7	6.0	5.3	8.8	12.1	10.8	10.2
Family Housing	1.5		2.9		3.1		3.9	3.5	3.4	4.3	4.1	3.8	3.6	3.5	3.7	4.0	4.2	3.8	4.2	4.6	4.5	3.6	3.5
Other	0.5		4.7		-0.4		3.0	3.1	3.4	2.4	6.1	0.3	4.6	5.6	13.5	2.7	3.0	0.2	1.7	1.1	0.5	0.3	3.8
DoD	140.7		286.8		292.9		267.1	251.3	255.7	254.5	257.9	258.5	278.5	290.4	319.4	345.0	437.9	441.7	402.6	423.7	444.9	466.8	488.9

	FY 80	~	FY85	~	FY 90	~	FY 93	FY 94	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09
FY 2005 Dollars																							
Personnel	121.1		133.0		133.2		113.8	104.3	102.0	97.3	95.2	90.7	89.0	88.9	89.6	95.9	115.6	120.9	106.3	107.8	108.3	108.4	108.4
O&M	98.7		132.7		129.0		117.3	113.5	117.5	114.7	110.8	113.4	119.9	121.7	124.9	140.5	184.8	171.0	141.2	143.6	145.2	146.7	150.2
Procurement	71.2		146.3		103.3		62.2	51.0	49.6	47.6	47.5	49.1	55.3	58.6	66.0	65.4	80.8	82.2	74.9	79.0	87.4	99.5	105.8
RDT&E	26.9		48.6		47.5		45.6	40.9	40.0	39.8	40.8	41.1	41.9	41.6	44.0	50.9	59.8	65.6	68.9	69.8	68.2	67.7	65.4
Military Construction	4.4		8.6		6.6		5.5	7.1	6.3	7.8	6.4	6.1	5.9	5.5	5.8	7.0	6.9	6.0	5.3	8.7	11.6	10.2	9.5
Family Housing	3.0		4.4		4.1		4.7	4.1	3.9	4.8	4.6	4.2	3.9	3.8	3.9	4.2	4.3	3.9	4.2	4.5	4.4	3.4	3.2
Other	1.1		7.1		-0.5		3.7	3.9	4.1	2.9	6.9	0.5	4.9	5.9	14.6	2.8	3.1	0.1	1.7	1.1	0.4	0.3	3.5
DoD	326.3		480.7		423.2		352.7	324.8	323.5	315.1	312.2	305.1	320.9	326.0	348.6	366.6	455.3	449.7	402.6	414.6	425.6	436.1	446.0

Source: CSBA, February 2004. Based on OMB, DoD and Other data.

**Includes* funding for the 1991 Gulf War and related allied cash contributions.

Table 5

FY 2005 Request for Selected Weapon Systems
(funding in millions of dollars)

	Qty	Proc	R&D	Total
Tactical Aircraft				
F/A-22 Fighter	24	4,157.0	928.6	5,085.6
F/A-18 E/F Super Hornet	42	2,985.8	134.6	3,120.4
Joint Strike Fighter (JSF)		0.0	4,571.9	4,571.9
Other Aircraft				
C-17 Cargo Aircraft	14	3,839.9	199.7	4,039.6
C-130	15	1,353.8	186.5	1,540.3
JPATS	53	309.6	0.0	309.6
T-45 Goshawk	8	253.6	0.0	253.6
E-2C Hawkeye	2	248.0	597.0	845.0
V-22 Osprey	11	1,361.1	395.4	1,756.5
UAVs	17	609.3	1,364.1	1,973.4
Submarine Programs				
NSSN/New Generation Submarine	1	2,453.0	143.3	2,596.3
Other Ships				
CVN-21 (carrier replacement prog.)		626.1	352.8	978.9
DDG-51 Destroyer	3	3,445.0	146.5	3,591.5
DD(X) Destroyer	1	0.0	1,450.6	1,450.6
Littoral Combat Ship (LCS)	1	0.0	352.1	352.1
LPD-17	1	966.6	9.0	975.6
T-AKE Dry Cargo Ship	2	768.4	0.0	768.4
Missiles/Munitions				
AMRAAM	248	141.3	42.4	183.7
JDAM	29,756	673.0	0.0	673.0
JASSM	360	148.2	72.8	221.0
JAVELIN	1,038	117.8	0.9	118.7
JSOW	389	139.4	9.5	148.9
Small Diameter Bomb (SDB)	158	29.3	86.5	115.8
Tactical Tomahawk	293	256.2	28.8	285.0
Trident II	5	768.6	108.8	877.4
Helicopters				
Longbow Apache	19	554.8	0.0	554.8
MH-60R	8	409.1	78.8	487.9
MH-60S	15	400.8	81.2	482.0
UH-60 Blackhawk	8	124.5	67.6	192.1
RAH-66 Comanche		12.0	1,229.7	1,241.7
Combat Vehicles				
Future Combat System		0.0	3,198.1	3,198.1
M1 Tank Upgrade Program	67	292.2	16.1	308.3
Bradley Base Sustainment Program		71.4	0.0	71.4
Stryker	310	905.1	51.9	957.0

Source: CSBA, February 2004. Based on DoD data.

Table 6

Department of Defense Budget by Service*
(budget authority in billions of dollars)

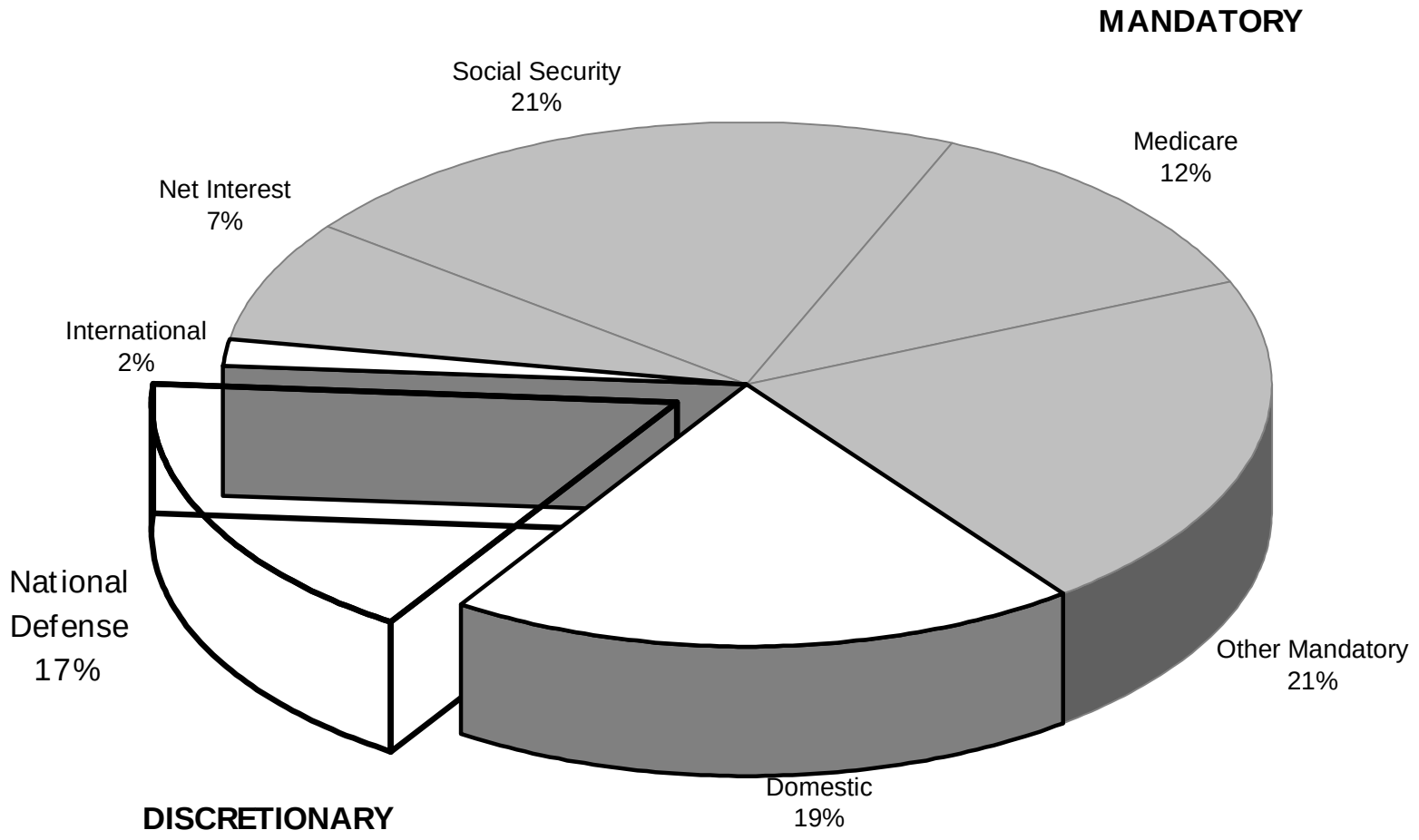
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003**	2004**	**2005**	2006	2007	2008	2009
Army																														
Current $	34.4	43.3	52.3	57.5	62.2	74.3	73.1	74.0	75.8	78.1	78.5	91.8	73.6	64.8	62.4	63.3	64.5	64.4	64.0	68.4	73.2	77.03	85.92	90.62	93.7	**97.2**	102.7	108	113.7	116.5
FY 2005$	79.8	89.1	99.0	104.0	108.5	124.5	120.1	118.5	117.2	116.1	113.4	127.6	100.0	85.6	80.7	80.1	79.9	78.0	75.6	78.8	82.1	84.1	91.3	94.2	95.4	**97.2**	100.5	103.3	106.2	106.3
% of total	*24%*	*25%*	*25%*	*24%*	*24%*	*26%*	*26%*	*26%*	*27%*	*27%*	*27%*	*29%*	*26%*	*24%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*	*25%*	*24%*	*24%*	*25%*	*25%*	***24%***	*24%*	*24%*	*24%*	*24%*
Navy																														
Current $	47.2	58.0	69.6	81.9	82.1	99.0	96.1	93.5	100.3	97.7	100.0	103.5	90.3	83.2	78.1	76.9	80.1	79.6	80.7	84.0	88.8	102.4	110.9	114.5	114.5	**119.3**	125.5	130.2	137.5	148.2
FY 2005$	109.6	119.5	131.8	148.0	143.3	166.0	157.9	149.7	155.0	145.2	144.4	143.8	122.7	109.9	100.9	97.4	99.2	96.3	95.2	96.8	99.7	111.7	117.9	119.0	116.5	**119.3**	122.8	124.5	128.5	135.2
% of total	*34%*	*33%*	*33%*	*34%*	*32%*	*35%*	*34%*	*33%*	*35%*	*34%*	*34%*	*32%*	*31%*	*31%*	*31%*	*30%*	*31%*	*31%*	*31%*	*30%*	*31%*	*32%*	*31%*	*31%*	*30%*	***30%***	*30%*	*29%*	*30%*	*30%*
Air Force																														
Current $	41.7	53.1	64.8	74.1	86.1	99.4	94.9	91.6	88.3	94.7	92.9	91.3	82.3	79.1	74.6	73.9	73.0	73.2	76.3	81.9	83.1	89.5	100.2	107.9	113.7	**120.5**	128.2	132.6	138.8	142.7
FY 2005$	96.8	109.5	122.8	133.9	150.3	166.6	155.8	146.7	136.5	140.8	134.2	126.8	111.8	104.5	96.4	93.5	90.4	88.6	90.0	94.4	93.2	97.7	106.5	112.2	115.7	**120.5**	125.5	126.8	129.7	130.2
% of total	*30%*	*30%*	*31%*	*31%*	*33%*	*35%*	*34%*	*33%*	*31%*	*33%*	*32%*	*29%*	*29%*	*30%*	*30%*	*29%*	*29%*	*28%*	*30%*	*29%*	*29%*	*28%*	*28%*	*29%*	*30%*	***30%***	*30%*	*30%*	*30%*	*29%*
Defense-wide																														
Current $	17.3	21.7	24.9	25.4	27.8	14.1	17.3	20.4	19.3	20.4	21.7	32.8	40.8	40.0	36.3	41.6	36.9	40.8	37.6	44.3	45.52	47.9	57.1	54.52	57.69	**64.7**	66.3	73.0	75.7	80.3
FY 2005$	40.2	44.7	47.1	46.0	48.5	23.7	28.5	32.6	29.9	30.3	31.3	45.6	55.5	52.9	46.9	52.6	45.7	49.4	44.3	51.0	51.1	52.3	60.7	56.7	58.7	**64.7**	64.9	69.8	70.7	73.3
% of total	*12%*	*12%*	*12%*	*11%*	*11%*	*5%*	*6%*	*7%*	*7%*	*7%*	*7%*	*10%*	*14%*	*15%*	*14%*	*16%*	*15%*	*16%*	*15%*	*16%*	*16%*	*15%*	*16%*	*15%*	*15%*	***16%***	*16%*	*16%*	*16%*	*16%*

Source: CSBA, February 2004. Based on DoD data.

* *Includes* funding for the 1991 Gulf War, excludes related allied cash contributions.
** Figures for FY 2003 and FY 2004 exclude funding provided in supplemental appropriations.

Graph 2

FY 2005 Federal Budget Request



Source: CSBA, February 2004. Based on OMB data.

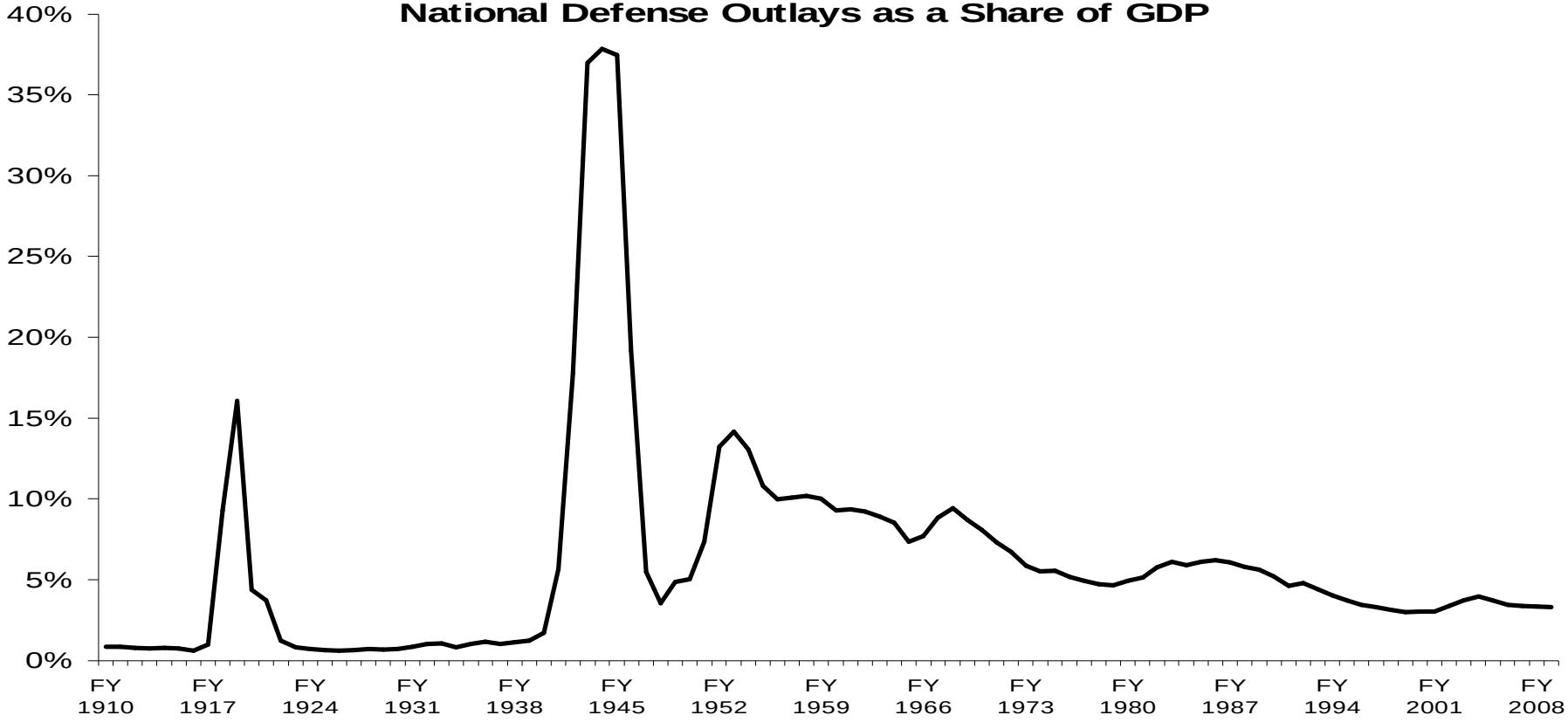
Table 7
National Defense, Federal Spending and the Gross Domestic Product*
FY 1980-FY 2009
(outlays in billions of current dollars)

Fiscal Year	National Defense Outlays (050)	Federal Outlays	050 as % of Federal Outlays	GDP	050 as % of GDP
1980	134.0	590.9	22.7%	3,061.6	4.4%
1981	157.5	678.2	23.2%	3,061.6	5.1%
1982	185.3	745.7	24.8%	3,228.6	5.7%
1983	209.9	808.4	26.0%	3,440.5	6.1%
1984	227.4	851.9	26.7%	3,839.4	5.9%
1985	252.7	946.4	26.7%	4,136.6	6.1%
1986	273.4	990.4	27.6%	4,401.4	6.2%
1987	282.0	1,004.1	28.1%	4,647.0	6.1%
1988	290.4	1,064.5	27.3%	5,014.7	5.8%
1989	303.6	1,143.6	26.5%	5,405.5	5.6%
1990	299.3	1,253.2	23.9%	5,735.6	5.2%
1991	273.3	1,324.4	20.6%	5,930.4	4.6%
1992	298.4	1,381.7	21.6%	6,218.6	4.8%
1993	291.1	1,409.5	20.7%	6,558.4	4.4%
1994	281.6	1,461.9	19.3%	6,944.6	4.1%
1995	272.1	1,515.8	17.9%	7,324.0	3.7%
1996	265.8	1,560.5	17.0%	7,694.6	3.5%
1997	270.5	1,601.3	16.9%	8,185.2	3.3%
1998	268.5	1,652.6	16.2%	8,663.9	3.1%
1999	274.9	1,701.9	16.2%	9,137.7	3.0%
2000	294.5	1,788.8	16.5%	9,718.8	3.0%
2001	305.5	1,863.8	16.4%	10,021.5	3.0%
2002	348.6	2,011.0	17.3%	10,336.6	3.4%
2003	404.9	2,157.6	18.8%	10,756.8	3.8%
2004	453.7	2,318.8	19.6%	11,303.1	4.0%
2005	450.6	2,399.8	18.8%	11,883.6	3.8%
2006	436.1	2,473.3	17.6%	12,482.6	3.5%
2007	447.1	2,592.1	17.2%	13,104.2	3.4%
2008	467.1	2,724.3	17.1%	13,751.5	3.4%
2009	487.2	2,853.5	17.1%	13,751.5	3.5%

Source: CSBA, February 2004. Based on OMB, CBO and DoD data.
* National defense estimates *include* outlays for the 1991 Gulf War and allied cash contributions.

Graph 3

National Defense Outlays as a Share of GDP



Source: CSBA, February 2004. FY 1934-09 based on DoD and OMB data. FY 1910-1933 based on CRS and OMB data. FY 1910-29 figures are for defense as a share of GNP.