ANALYSIS OF THE FY 2011 DEFENSE BUDGET

Todd Harrison

Thinking Smarter About Defense

Center for Strategic and Budgetary Assessments

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CONTENTS

EXECUTIVE SUMMARY

The Obama Administration's FY 2011 budget request includes a total of $712 billion for the Department of Defense (DoD). The base budget for the Department includes $549 billion in discretionary funding and $4 billion in mandatory funding. An additional $159 billion is requested for the wars in Afghanistan and Iraq. The budget also requests $19 billion for defense-related atomic energy programs, $8 billion for defense-related activities in other agencies, and $122 billion for veterans. Together these expenses total $861 billion, or 22 percent of the total federal budget.

The FY 2011 budget request grows the base defense budget at 2.4 percent above the rate of inflation. This is less than the 3.4 percent real rate of growth proposed in last year's budget request and the 4.0 percent real annual rate of growth experienced over the past decade. The Future Years Defense Program (FYDP) submitted with the budget projects continued growth in the defense budget in the coming years at a real annual rate of 1.2 percent through FY 2015.

In inflation-adjusted dollars, the total national defense budget request for FY 2011 is at the highest level since World War II. Even if only the base defense budget is considered, the FY 2011 budget request exceeds the previous peak in defense spending in FY 1985 of $538 billion (in FY 2011 dollars). However, defense spending as a percent of GDP is 4.8 percent in the FY 2011 budget request, below the post-World War II average of 6.5 percent.

One of the overall themes in this year's budget request is deficit reduction. The president's budget projects that the deficit will rise to a record level of $1.6 trillion in FY 2010. In an attempt to address the deficit, the FY 2011 budget request proposes a freeze in non-security discretionary spending, which excludes defense, homeland security, veterans, and other security-related programs. The proposed freeze applies to less than one sixth of the total federal budget and saves $15 billion, compared to a $45 billion increase in security-related spending. While the defense budget avoided cuts this year, as the deficit becomes a more pressing issue, both fiscally and politically, deficit reduction measures will likely put downward pressure on everything in the budget, including defense spending.

HIGHLIGHTS OF THE ADMINISTRATION'S BUDGET PROPOSAL

- There are few surprises or significant shifts in funding contained in the FY 2011 defense budget request. Rather than making new changes, this budget continues and consolidates the reforms and rebalancing initiated in the FY 2010 budget.
- Personnel-related costs continue to grow in the FY 2011 budget request. The budget includes a 1.4 percent pay increase for military personnel, which is equal to the Employment Cost Index. The request does little to slow the rate of growth in military healthcare costs, which are up 3.4 percent in real terms for FY 2011 to a total of $50.7 billion—nearly one tenth of the total DoD base budget. Payments for the TRICARE for Life program alone total $10.9 billion in the FY 2011 request.
- Operation and Maintenance (O&M) funding is up 7.4 percent in real terms from FY 2010. O&M funding is at a high level by historical standards and totals $210,000 per active-duty troop, or $133,000 if war funding is excluded. This compares to $64,000 in O&M funding per troop in FY 1990 and $95,000 per troop in FY 2000 (all figures in FY 2011 dollars).
- Unlike the FY 2010 budget, the FY 2011 request proposes few new program cuts or terminations. The top two program cuts proposed, the C-17 and the Joint Strike Fighter Alternate Engine, were proposed last year and are again likely to meet stiff resistance in Congress. The budget also contains few new program starts, although it notably includes $1.7 billion over the FYDP to begin development of Long-Range Strike capabilities (e.g. the Next-Generation Bomber) and $0.8 billion for Air-Launched Cruise Missile Modernization.
- For the second year in a row, the budget requests a full year of funding for the wars in Iraq and Afghanistan. The FY 2011 request for Overseas Contingency Operations (OCO) is $159.3 billion, of which $110.3 billion is designated for operations in Afghanistan and $43.4 billion for Iraq.
- Classified or "black" programs total some $57.8 billion in the FY 2011 request, a real increase of 2.8 percent from FY 2010. Classified funding accounts for 19 percent of acquisition funding and 7.3 percent of O&M funding in the FY 2011 base defense budget.
- The FY 2011 budget is the final year for implementation of the recommendations from the 2005 Base Realignment and Closure (BRAC) report. The FY 2011 request includes $2.7 billion in BRAC funding. Spending related to the 2005 BRAC has totaled $33 billion to date, with funding peaking in FY 2009 at $9.2 billion (in FY 2011 dollars). The FYDP projects that residual BRAC funding will average $175 million per year for FY 2012 to FY 2015. The total cost of the 2005 BRAC is now estimated to exceed $36 billion, and the net present value over 20 years is a projected savings of $12.9 billion.

I. OVERVIEW OF THE BUDGET REQUEST

The Obama Administration is requesting a total of $712 billion for the Department of Defense (DoD) in the FY 2011 budget. The base budget for the Department includes $549 billion in discretionary funding and $4 billion in mandatory funding. An additional $159 billion is requested for the wars in Afghanistan and Iraq. The administration also included a $33 billion supplemental request for the remainder of FY 2010 to support the surge of forces in Afghanistan.

Total defense spending, however, includes more than is captured in the DoD budget alone. The budget request also includes $19 billion for defense-related atomic energy programs, $8 billion for defense-related activities in other agencies, and $122 billion for veterans. Together these expenses total $861 billion, or 22 percent of the total federal budget, including both mandatory and discretionary funding.

TABLE 1. TOTAL DEFENSE-RELATED FUNDING IN THE FY 2011 REQUEST

Account	**FY 2011 Request** *(in billions)*
DoD Base Discretionary	$ 548.7
DoD Base Mandatory	$ 4.3
DoD Overseas Contingency Operations	$ 159.3
DoD Total (051)	***$ 712.3***
Department of Energy	$ 17.7
Department of Labor	$ 1.0
Other Agencies	$ 0.2
Atomic Energy Total (053)	***$ 18.8***
Department of Justice	$ 4.7
Department of Homeland Security	$ 1.6
Other Agencies	$ 1.3
Defense-Related Activities Total (054)	***$ 7.6***
Department of Veterans Affairs	$ 121.7
Other Agencies	$ 0.3
Veterans Total (700)	***$ 122.0***
Total Defense-Related Spending	***$ 860.5***

One of the overall themes in this year's budget request is deficit reduction. The budget projects that the deficit will rise to a record level of $1.6 trillion in FY 2010. This record-level deficit is due to a combination of increased spending on fiscal stimulus programs, a sharp reduction in tax revenues due to the recession, and a structural deficit that existed before the current economic crisis. In an attempt to address the deficit, the FY 2011 budget request proposes a freeze in non-security discretionary spending, which excludes defense, homeland security, veterans, and other security-related programs. The proposed freeze applies to less than one sixth of the total budget and reduces the FY 2011 budget by $15 billion from the projected baseline, compared to a $45 billion increase in security-related spending and a projected budget deficit of $1.3 trillion for FY 2011. As Congress and the administration focus more effort on deficit reduction in the coming years, it will likely put downward pressure on the entire budget, including defense spending.

BASE DEFENSE BUDGET

The $553 billion base defense budget covers the peacetime costs of the Department of Defense. This figure includes $4 billion in mandatory funding, primarily accrual payments to the Military Retirement Fund. In real terms, the base budget is a 2.4 percent increase over the FY 2010 budget.[1] This represents a slower rate of growth than the 4.0 percent real annual rate of growth experienced over the past ten years. But compared to the real decrease of 2.4 percent in non-security discretionary spending proposed in the FY 2011 budget, the DoD budget fared well. Moreover, the FYDP projects that while non-security-related spending continues to decline in the coming years, the base defense budget continues growing at a real annual rate of 1.2 percent through FY 2015.

Each Service's budget receives an increase in the FY 2011 request. The Air Force receives the largest increase at 3.5 percent in real terms. The share of the defense budget allocated to each Service remains relatively constant, with 26 percent going to the Army, 29 percent to the Navy, 27 percent to the Air Force, and 17 percent for Defense-Wide activities.

Operation and maintenance (O&M), procurement, and military personnel accounts all increase at inflation adjusted rates of 7.4 percent, 6.6 percent, and 1.5 percent, respectively. The research, development, test, and evaluation (RDT&E) and family housing accounts both decline by 6.0 percent and 22.6 percent, respectively. Military construction (MILCON) also declines by 20.4 percent, although much of this decrease is due to the planned completion of the 2005 BRAC process. Overall, 62 percent of the base defense budget is allocated for operations and support (O&M and military

[1] Unless otherwise stated, all values shown are in real (inflation adjusted) FY 2011 dollars and are calculated using the GDP deflators provided in the Office of Management and Budget's Historical Tables, Table 10.1 (accessed at http://www.whitehouse.gov/omb/budget/fy2011/assets/hist10z1.xls). Using DoD's own deflators would show a more modest growth in defense spending because, relative to the GDP deflator, DoD's deflators tend to understate growth in personnel costs.

personnel), 34 percent for acquisition (RDT&E and procurement), and 4 percent for military construction, family housing, and other expenses.

There are few surprises or significant shifts in funding contained in the FY 2011 defense budget request. Rather, this budget request continues and consolidates the changes instituted in the FY 2010 budget. It makes relatively few program cuts or terminations, beyond those already proposed in the FY 2010 budget, and does not initiate many new programs. Moreover, it proposes continued real growth in military healthcare and other personnel-related costs.

The Quadrennial Defense Review (QDR), released the same day as the budget, calls for the department to place a higher priority on "the urgent demands of today and the most likely and lethal threats of the future." The QDR goes on to say that "for the first time, it [the QDR] places the current conflicts at the top of our budgeting, policy, and program priorities."[2] However, in a time of constrained budgets, this reordering of priorities requires a corresponding rebalancing of resources and a willingness to consign emerging threats to a lower priority. In this respect, the FY 2011 defense budget reflects an unwillingness to make difficult decisions about where to do without or to do with less—i.e. where to take risk—in order to make additional resources available for higher priorities. The Department may have avoided making these trade-offs for the time being due to the increased funding Office of Management and Budget (OMB) agreed to late in the budget cycle.[3] However, as the budget deficit places increased pressure on the overall federal budget, DoD will not be able to continue to avoid making these difficult decisions. In a recent speech at the Eisenhower Library, Secretary Gates conceded this fact:

> Given America's difficult economic circumstances and parlous fiscal condition, military spending on things large and small can and should expect closer, harsher scrutiny. The gusher has been turned off, and will stay off for a good period of time. [...] What is required going forward is not more study. Nor do we need more legislation. It is not a great mystery what needs to change. What it takes is the political will and willingness, as Eisenhower possessed, to make hard choices — choices that will displease powerful people both inside the Pentagon and out.[4]

TERMINATIONS, REDUCTIONS, AND SAVINGS

The FY 2011 budget request includes a separate section entitled *Terminations, Reductions, and Savings*. This document summarizes programs that are reduced or terminated in the budget in an effort to reduce wasteful or unnecessary spending. The savings total some $23 billion in FY 2011 derived from 126 different programs across the federal budget. Eleven of the programs and $3.2 billion of the FY 2011 savings come from the defense budget. The defense-related proposed savings are small in relation to

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[2] DoD, *Quadrennial Defense Review Report* (Arlington VA: DoD, February 2010), p. i.

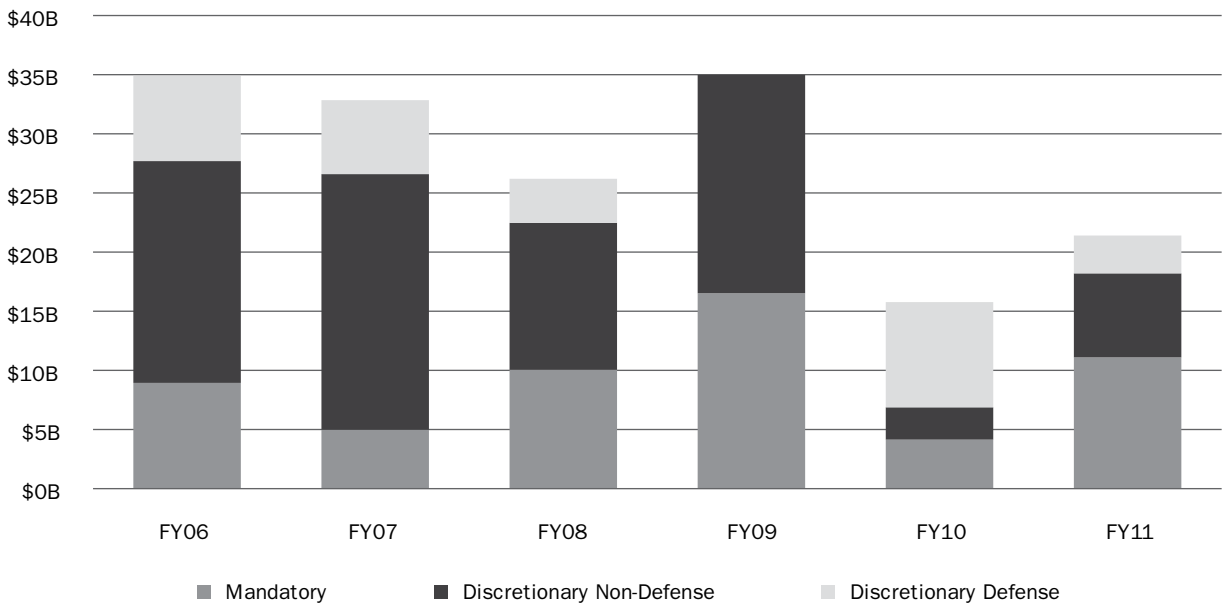
[3] Inside Defense, *DoD Official: FY-11 Budget Topline Likely To Get Boost From OMB* (October 29, 2009).

[4] Robert Gates, *Remarks at the Eisenhower Library* (Abilene, KS, May 8, 2010). Accessed at http://www.defense.gov/speeches/speech.aspx?speechid=1467.

the total DoD base budget (less than 0.6 percent) and are more than offset by increases in other areas of defense spending.

Of the $17 billion in savings proposed in FY 2010 (including non-defense items), $6.8 billion was enacted by Congress. The termination of F-22 production was the largest program cut proposed in the FY 2010 request that was ultimately enacted by Congress, accounting for over $2.9 billion of the total savings.

FIGURE 1. PROPOSED SAVINGS IN BUDGET REQUESTS (in billions of FY 2011 dollars)



This year the proposed cuts focus relatively less on defense programs (15 percent in FY 2011 versus 56 percent in FY 2010) and more on mandatory programs (52 percent in FY 2011 versus 26 percent in FY 2010). The top three savings proposed in FY 2011 are the termination of $8 billion in mandatory spending that provides subsidies to banks that make student loans, $3.5 billion for NASA's Constellation program, and $2.5 billion for the procurement of additional C-17s.

TABLE 2. DOD TERMINATION, REDUCTIONS, AND SAVINGS IN THE FY 2011 BUDGET REQUEST

Program	Decision	FY 2011 Savings *(in millions)*
C-17 Globemaster	End production of the C-17 after delivery of the 223 aircraft already on order.	$ 2,500
Joint Strike Fighter Alternate Engine (F136)	End development of the Alternate Engine Program.	$ 465
Third Generation Infrared Surveillance Program (3GIRS)	Terminate the 3GIRS program and instead focus on completing and upgrading the existing Space Based Infrared System (SBIRS).	$ 73
Expeditionary Fighting Vehicle (EFV)	Delay procurement of EFV by one year to allow for the completion of testing before beginning production.	$ 50
Next-Generation Cruiser CG(X)	End plans for the CG(X) due to its projected high cost and risk.	$ 46
EP-X Intelligence, Surveillance, and Reconnaissance Aircraft	End the EP-X program, which was intended to replace the Navy's EP-3 surveillance aircraft.	$ 12
Net Enabled Command Capability (NECC)	End the NECC program because it is significantly behind schedule and unlikely to meet its required capabilities.	$ 9
Cellular Airtime Optimization	Optimize the selection of cell phone calling plans for Air Force personnel according to actual usage.	$ 2
Army's Unemployment Compensation Process	Expand to all 50 states the Army's streamlined process for verifying Soldier's claims for unemployment to prevent erroneous claims.	$ 0.2
Command Ship Replacement (LCC-R)	Delay procurement of the LCC-R and instead extend the service life of the two command ships the program was intended to replace. Savings would not be realized until the planned FY 2012 and FY 2014 procurements.	$ 0
Administrative Support on Navy Ships	Reassess the administrative process used for sailors detaching from a forward-deployed ship to avoid having personnel travel to a shore-based personnel office to complete paperwork. The Navy has not yet produced an estimate of the cost savings.	$ 0

The top two defense program cuts proposed, the C-17 and the Joint Strike Fighter (JSF) Alternate Engine, have been proposed several times before. DoD proposed ending the C-17 program at 180 aircraft in FY 2007, but since then production has been extended each year by Congress. Proponents argue that the C-17 is a versatile airlift platform in high demand for operations in Iraq and Afghanistan. The Department has countered that its analysis of current and future mobility needs shows that additional C-17s are not needed.[5] DoD has likewise proposed terminating the JSF Alternate Engine program, also known as the F136, each year since FY 2007. Proponents of the program point to potential long-term cost savings from having competing engines, citing the Great Engine War of the 1980s and the resulting cost savings for the F-16 program.[6] The Department

[5] DoD, *Mobility Capabilities and Requirements Study 2016* (Arlington VA: DoD, February 2010), p. 4.

[6] Robert W. Dewes, *The Air Force and the Great Engine War* (Washington, DC: National Defense University, May 1987).

has countered that, according to its own estimates, the long-term cost savings do not justify the up-front investment required and that continued funding of the F136 could delay the overall JSF program. The total cost to develop the Alternate Engine is estimated to be $4.5 billion, of which $2.9 billion has already been spent.[7] However, as more of the development cost becomes sunk cost with each year of continued funding, the cost-benefit analysis shifts in favor of continuing the Alternate Engine program.

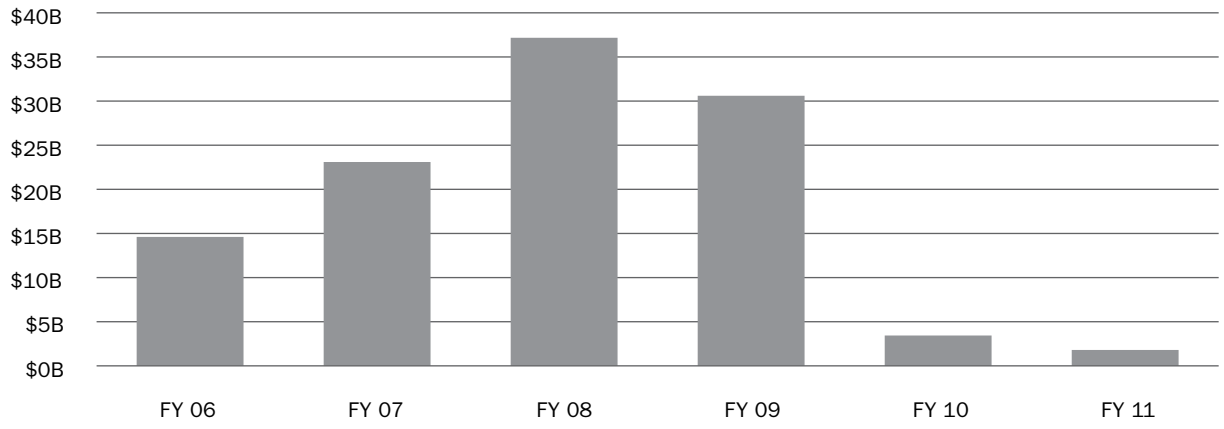
UNFUNDED PRIORITIES

Each year, the Services rank and prioritize items for inclusion in the budget request. Unfunded priorities are those items not included in the budget request because they are a lower priority and do not fit within the funding ceiling set for the Department. The Services' lists of unfunded priorities, sometimes referred to as "wish lists," are routinely requested by Congress for consideration during their markup of the budget. The total amount of unfunded priorities grew dramatically over the past decade, rising from $7.6 billion in FY 2001 to a peak of $35 billion in FY 2008. Last year, in a departure from precedent, Secretary Gates required the Services to present their unfunded priorities to him for review before submitting them to Congress. Unfunded priorities for FY 2010 totaled just $3.4 billion—an order of magnitude reduction. The FY 2011 unfunded priorities lists continue this trend, totaling just $1.8 billion.

ARMY: The Army's unfunded priorities for FY 2011 total $359 million, $39 million of which is requested in the Overseas Contingency Operations (OCO) budget. The largest single item included is $137 million for the Patriot missile defense system. The Army

[7] GAO, *Joint Strike Fighter: Additional Costs and Delays Risk Not Meeting Warfighter Requirements on Time* (Washington DC: GAO, March 2010), p. 8.

FIGURE 2. UNFUNDED PRIORITIES (in FY 2011 dollars)



also requests $55 million for tactical local area network (TACLAN) and peripheral systems, $51 million for Defense Advanced GPS Receivers (DAGR), and $47 million for Light Weight Counter-Mortar Radar (LCMR). All of the items included in the Army's unfunded priorities list are in RDT&E and procurement.

NAVY: The Navy's unfunded priorities total $532 million. The list includes three items, the largest of which is $423 million for aviation spare parts. The Navy cites an increase of 40 percent in demand for spare parts due to the higher operational tempo. It also requests a $74 million increase in aviation depot maintenance for 21 deferred airframes and 342 deferred engines, and a $35 million increase in ship depot maintenance for 9 deferred surface ships.

AIR FORCE: The highest amount of unfunded priorities for FY 2011 comes from the Air Force, whose list includes five items totaling $548 million. At the top of the list is $337 million for weapon system sustainment. This includes maintenance for the B-2, B-1, C-5, and KC-135 aircraft, service life extensions for 4 A-10s, and 6 C-5 engine overhauls. An additional $70 million is requested for theater readiness equipment, such as fuel bladders and other war readiness material, and $57 million for replacement vehicles for the Guard and Reserve. It also requests $55 million to fund the Integrated Collaborative Command and Control of Processing, Exploitation, and Dissemination System and $29 million for upgrades to survey, communication, and simulator equipment for airfield operations.

MARINE CORPS: The unfunded priorities list submitted to Congress by the Marine Corps totals $351 million. Nearly half of this amount, $168 million, is for the procurement of additional aircraft, namely the KC-130J, UC-35ER, and UC-12W. The list includes $34 million for CH-53 helicopter reliability improvements and $131 million for vehicles and readiness equipment. It also requests $18 million for modernization of the Child Development Center at the 29 Palms Marine Corps Air Ground Combat Center.

FUNDING FOR THE WARS

For the second time, the budget requests a full year of funding for the wars in Iraq and Afghanistan. The total request for OCO budget is $159.3 billion, of which $110.3 billion is designated for operations in Afghanistan, $43.4 billion for Iraq, and $5.6 billion for non-DoD classified and other purposes. These funding levels continue the trend of declining funding for Iraq, as troops levels there subside, and increasing funding for Afghanistan. The budget request does not include a projection for war costs in future years. Instead, it includes "allowances" of $50 billion per year for FY 2012 to FY 2015, the same amount that was used in the FY 2010 budget request as a placeholder for future OCO funding.

Along with the FY 2011 budget request, the administration released a supplemental request for an additional $33 billion in FY 2010 funding for the wars in Iraq and Afghanistan. The supplemental request was submitted after the president announced the decision to surge an additional 30,000 troops into Afghanistan. The cost per troop in Afghanistan has averaged $1.2 million per troop per year, and accordingly the surge is expected to cost an additional $30–35 billion per year. However, the surge did not begin until at least one quarter of the way into FY 2010 and the build-up of troops will happen gradually over the remainder of the fiscal year. DoD projects that the average number of troops for the year will be 16,000 higher than assumed in the FY 2010 budget.[8] The projected cost of the surge in FY 2010, therefore, should be near $19 billion, about half the amount requested in the supplemental.

A combination of factors above and beyond the surge explains the additional costs in the supplemental. These factors include fuel costs that exceeded previous estimates ($2 billion), additional MRAP procurements for troops already deployed to Afghanistan before the surge ($1.1 billion), accelerated growth of Afghan National Security Forces ($2.6 billion), support for Iraqi Security Forces ($1 billion), and military construction for increased airfield and logistics capacity ($0.5 billion).

The future cost of the wars depends on a number of external factors that cannot be known in advance, such as operational tempo, fuel prices, and the number and composition of forces required in future years. While the cost of each conflict depends

[8] DoD, *Fiscal Year 2011 Budget Request: Overview* (Arlington VA: DoD, February 1, 2010), p. 6–6.

FIGURE 3. DOD WAR FUNDING (in FY 2011 dollars)

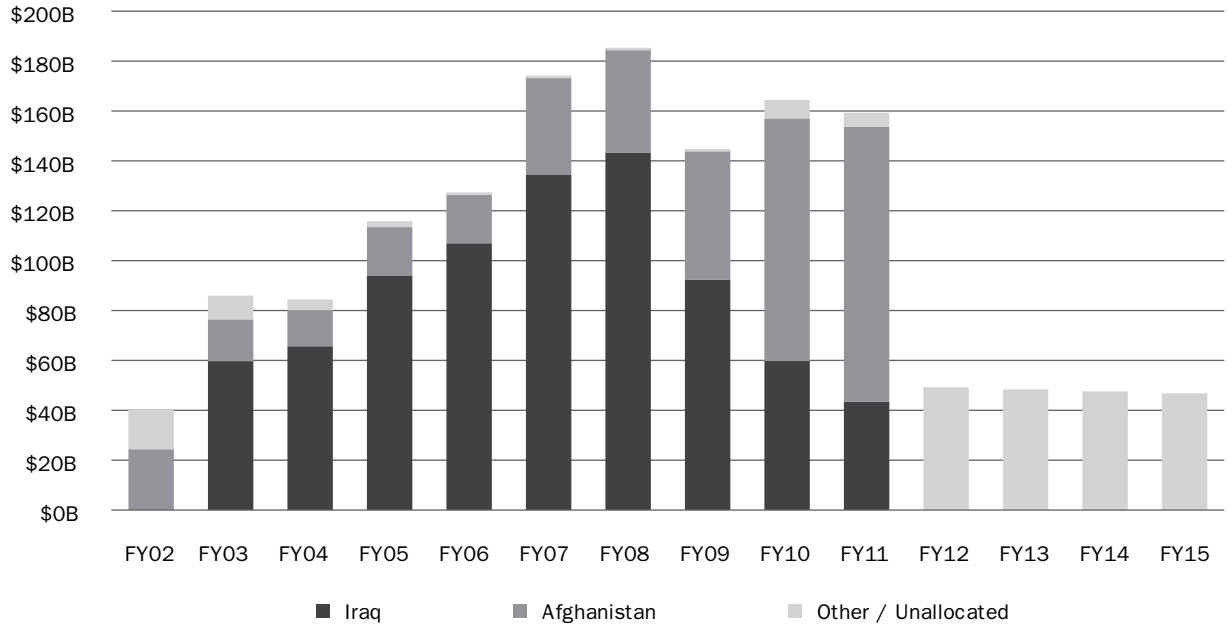
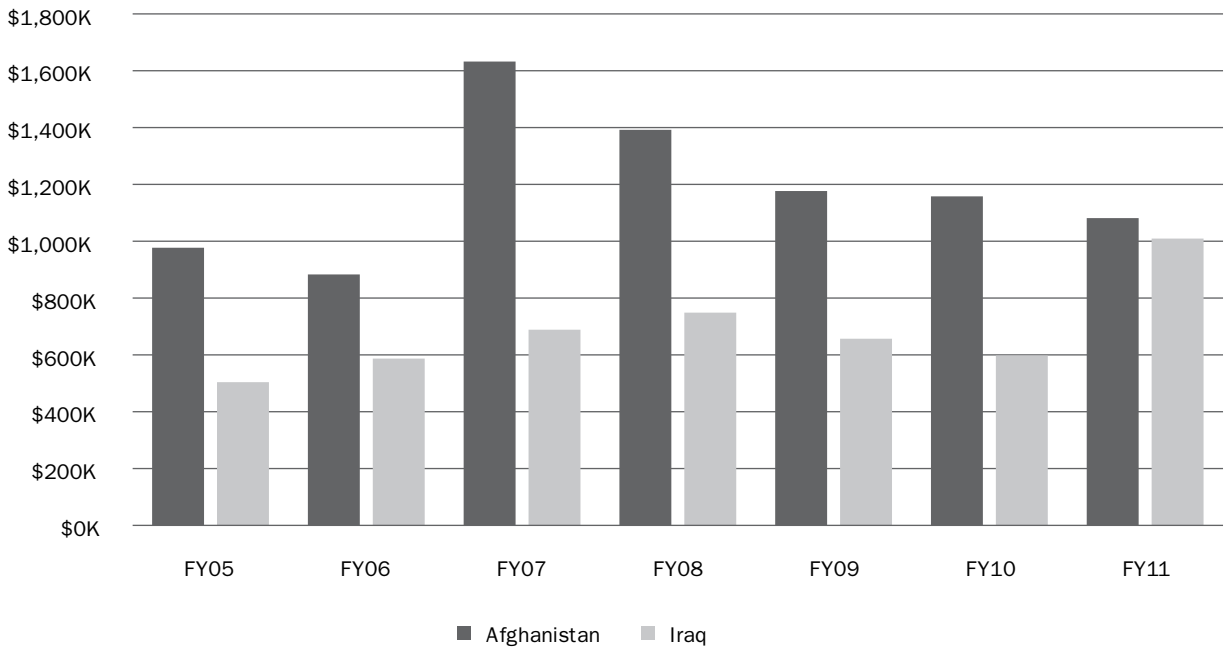


FIGURE 4. COST PER TROOP (in thousands of FY 2011 dollars)

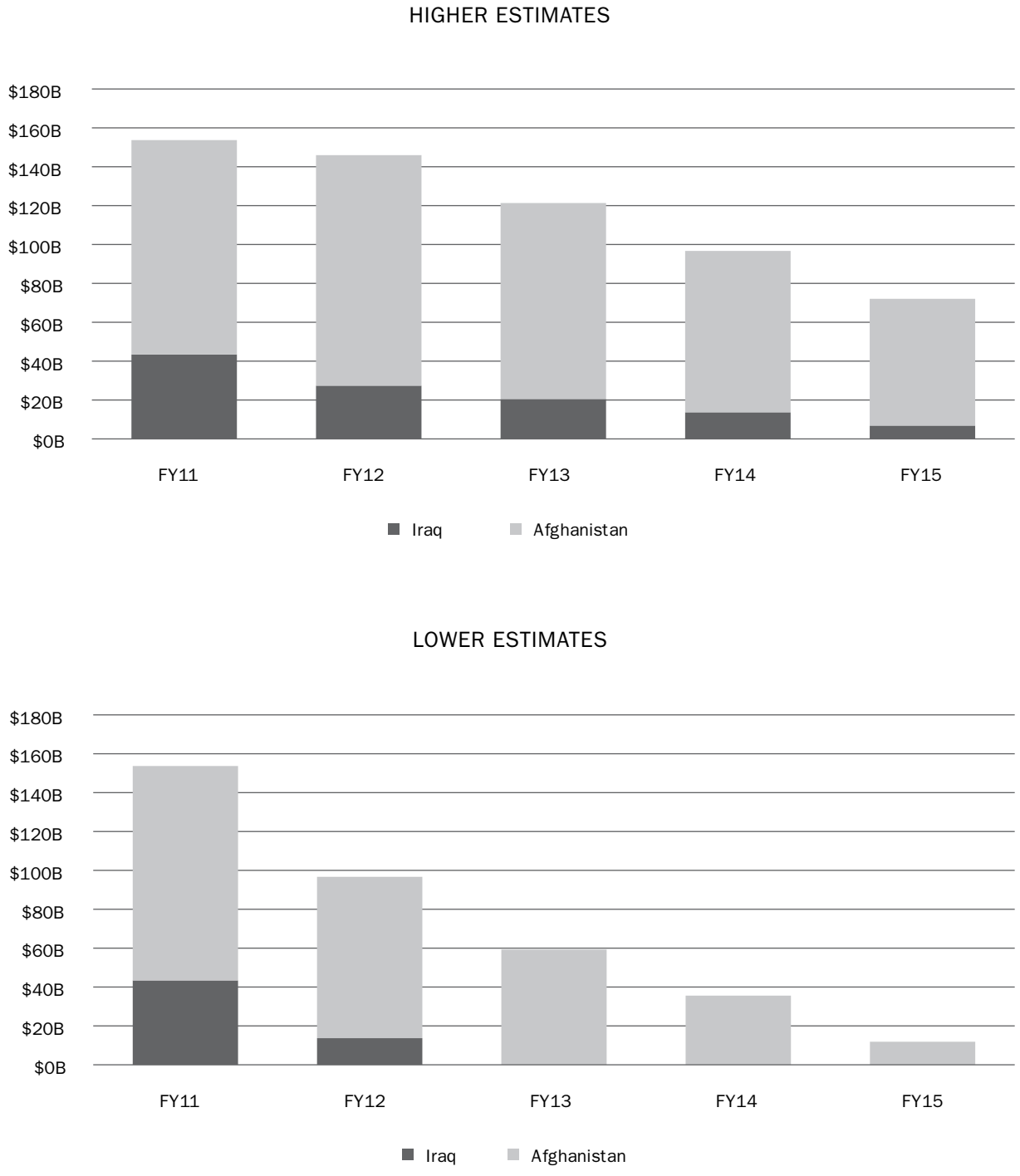


on many variables, previous analysis by CSBA has demonstrated a strong correlation between the number of troops deployed and the total annual cost.[9] Based on the most current information on troop levels and costs, the annual cost per troop since FY 2005 has averaged $1.186 million in Afghanistan and $0.685 million in Iraq, in constant-year FY 2011 dollars.

One method for estimating the future costs of Iraq and Afghanistan is to use the average cost per troop combined with different scenarios for future troop levels. The figures below show both a higher and lower estimate for future war costs based on different assumptions for troop levels in future years. These estimates are not an upper and lower bound but rather serve as hypothetical scenarios that provide a frame of reference for future costs. The higher estimate assumes that troop levels in Afghanistan remain near the peak surge level throughout FY 2012 and then decline by 15,000 per year to a level of 55,000 in FY 2015. In Iraq, the higher estimate assumes the number of troops remains nearly constant at 40,000 for FY 2012 and 10,000 are withdrawn each year thereafter. The lower estimate assumes troop levels in Afghanistan return to pre-surge levels in FY 2012 and then decline at a rate of 20,000 per year so that only 10,000 troops remain in FY 2015. In Iraq, the lower estimate assumes the withdrawal of forces is completed in FY 2012 and no troops remain in country from FY 2013 forward. These assumptions lead to a total cost of $590 billion and $357 billion over the Future

[9] Todd Harrison, *Estimating Funding for Afghanistan* (Washington DC: CSBA, December 1, 2009).

FIGURE 5. FUTURE WAR COSTS (in billions of FY 2011 dollars)



Years Defense Program (FYDP), respectively. The budget request includes $359 billion in funding and allowances over the FYDP.

An on-going concern has been whether the war funding appropriated by Congress reflects the true cost of the wars. The definition of what is considered a war cost expanded significantly in October 2006 when DoD issued new guidance for the Services to build into their FY 2007 war funding requests costs related to the "longer war against terror." This included permanent increases to end-strength, additional maintenance costs, and procurement of items that, in some cases, had been part of long-term modernization plans.[10] The inclusion of these items in emergency supplemental requests meant that they received less Congressional scrutiny and were not evaluated alongside other items in the base budget.

In February 2009, OMB issued new guidance entitled *Criteria for War/Overseas Contingency Operations Funding Requests* that specified what items should be considered war-related costs. It limited OCO costs geographically to the areas covered by US Central Command, the Horn of Africa, the Indian Ocean, and the Philippines. It tightened the standards for equipment procurement and set a 12-month timeframe for the obligation of these funds. It also mandated that RDT&E funding only be used for projects required for combat operations that could be delivered within 12 months. Moreover, it moved all funding for the permanent increase in the size of the Army and Marine Corps into the base budget and excluded BRAC-related funding from the OCO request. The DoD Comptroller estimated a total of $7.8 billion in funding shifted from OCO to the base budget in FY 2010 as a result of this change in policy.[11] However, even under this stricter policy, the FY 2011 OCO budget request includes funding for the procurement of one F-35 Joint Strike Fighter—an aircraft that is still in development and is not operationally relevant to the current conflicts.

OTHER DEFENSE-RELATED FUNDING

The FY 2011 budget request includes $148 billion in defense-related funding outside of the DoD budget. It includes a total of $18.8 billion for atomic energy defense activities, primarily through the Department of Energy. This funding is used for weapons activities ($7.0 billion), defense environmental cleanup ($5.6 billion), non-proliferation programs ($2.7 billion), and naval nuclear reactors ($1.1 billion).

The budget request includes an additional $7.6 billion for defense-related activities in other agencies. More than half of this amount, $4.7 billion, is directed for defense-related activities in the Federal Bureau of Investigation (FBI). It also provides $1.6 billion for the Department of Homeland Security—specifically to the US

[10] GAO, *DOD Needs to Take Action to Encourage Fiscal Discipline and Optimize the Use of Tools Intended to Improve GWOT Cost Reporting* (Washington DC: GAO, November 2007), p. 19–22.

[11] GAO, *Overseas Contingency Operations: Funding and Cost Reporting for the Department of Defense* (Washington DC: GAO, December 18, 2009), p. 12.

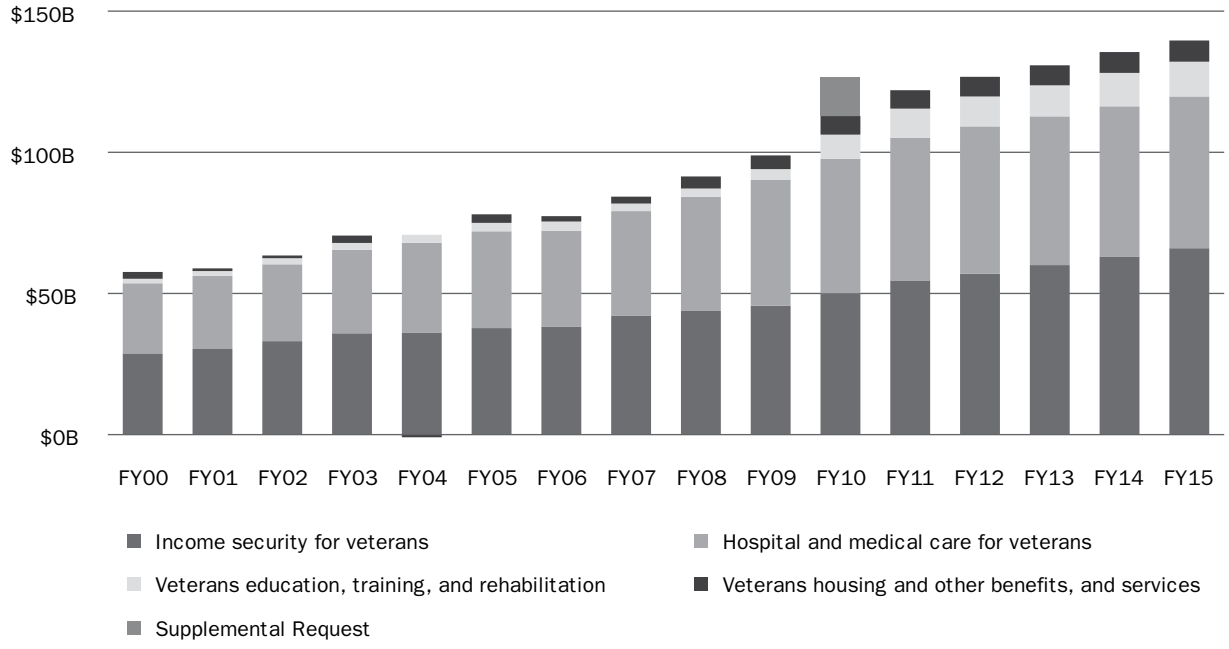
Coast Guard, Federal Emergency Management Agency, and the National Protection and Programs Directorate—and provides $0.7 billion to the Intelligence Community Management Account.

A total of $122 billion is included for veterans and veterans' benefits ($57 billion in discretionary funding and $65 billion in mandatory funding), primarily through the Department of Veterans Affairs. This is an 8 percent real increase over the amount appropriated in FY 2010, which itself was a 14 percent real increase over FY 2009. Spending on veterans increased at a real annual rate of 7.0 percent from FY 2000 to FY 2010, making it one of the fastest-growing areas of defense-related spending. After FY 2011, the administration projects 3.4 percent real growth annually in veteran-related funding through FY 2015.

The administration also included a supplemental request of $13.4 billion in FY 2010 funding to cover additional costs resulting from the decision to add three new diseases to the list of conditions with a presumed service connection from exposure to Agent Orange. As a result, the Veterans Administration expects 86,069 Vietnam beneficiaries will receive retroactive payments, another 27,909 veterans will receive a higher combined disability rating, and an estimated 28,934 veterans and 10,416 survivors will be added as new beneficiaries.[12]

[12] Department of Veterans Affairs, *FY 2011 Budget Submission Summary Volume, Volume III: Benefits and Burial Programs and Departmental Administration* (Washington DC: DVA, February 1, 2010), p. 2A–4.

FIGURE 6. VETERANS FUNDING (in billions of FY 2011 dollars)



HISTORICAL PERSPECTIVES

The total national defense budget request for FY 2011, adjusted for inflation, is at the highest dollar amount since World War II and is higher than total defense spending at any point in the Vietnam or Korean Wars. Even if the cost of the wars in Iraq and Afghanistan are excluded, the budget request exceeds the previous peak in defense

FIGURE 7A. TOTAL NATIONAL DEFENSE (050) BUDGET AUTHORITY
(in billions of FY 2011 dollars and as a percent of GDP)

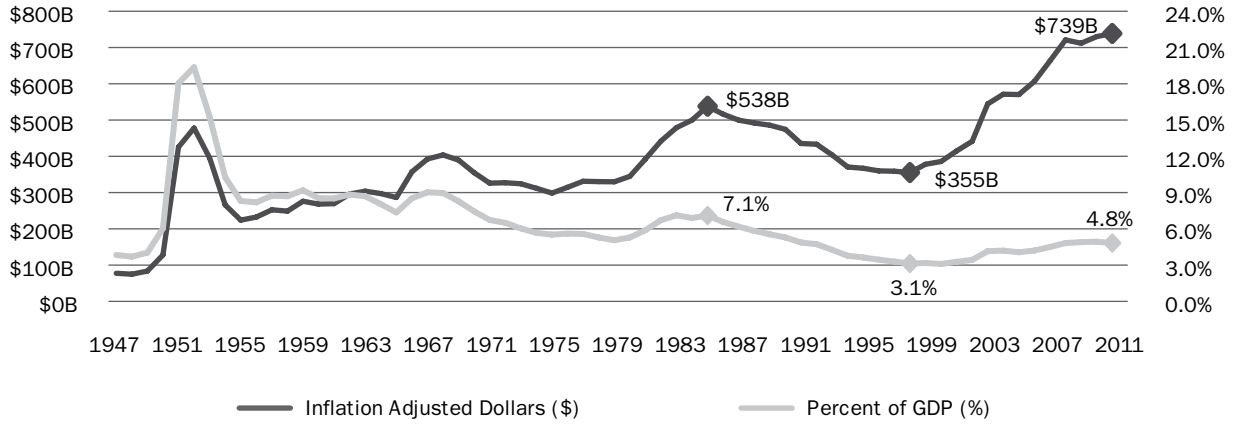
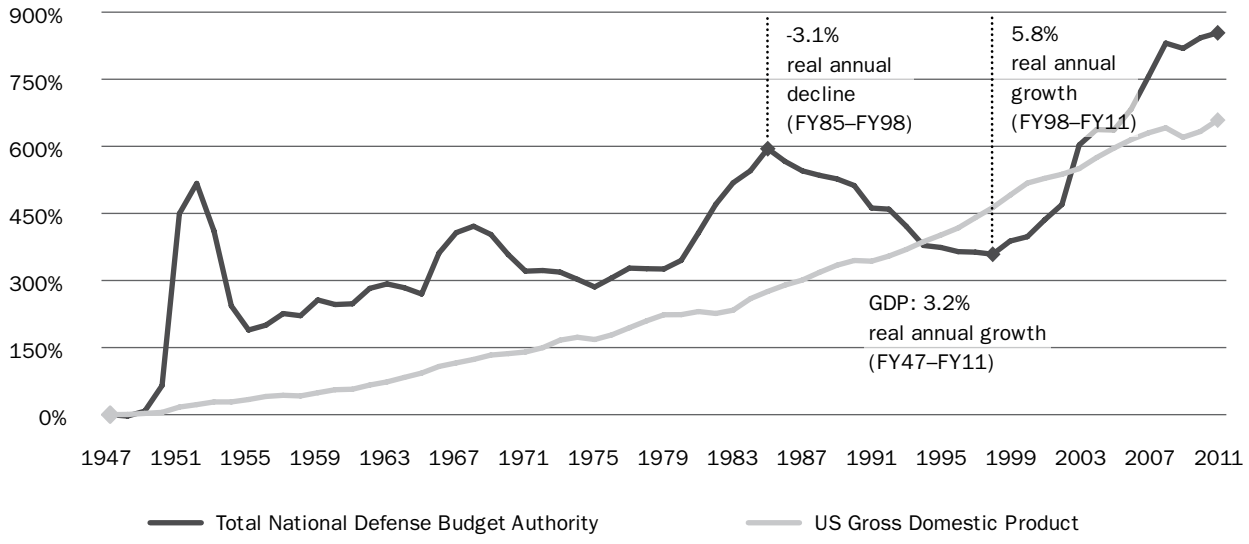


FIGURE 7B. INFLATION ADJUSTED GROWTH IN TOTAL NATIONAL DEFENSE (050) BA AND US GDP

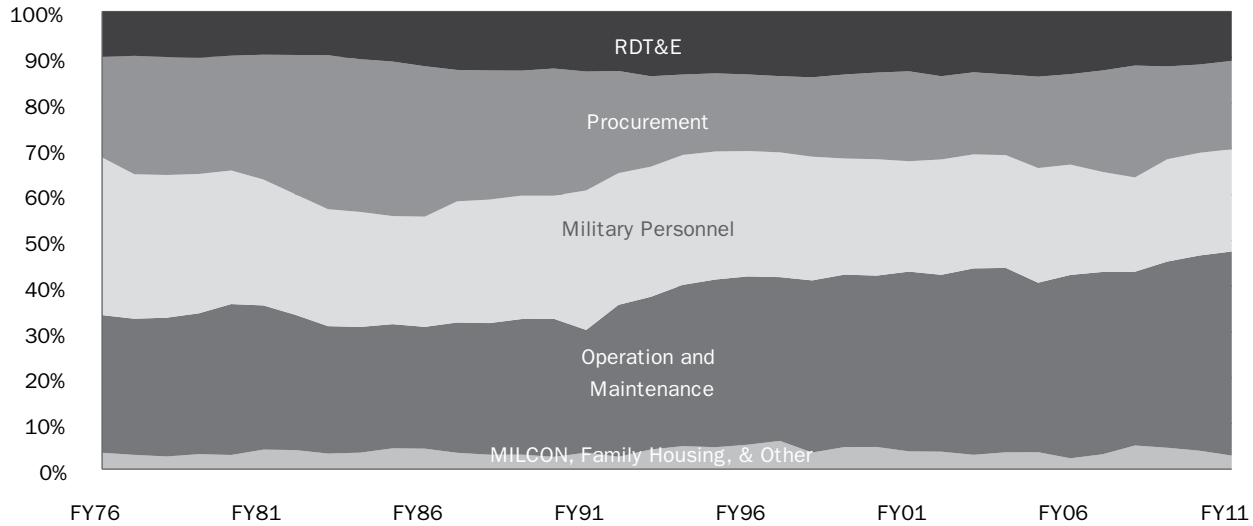


spending in FY 1985 of $538 billion in FY 2011 dollars. However, defense spending as a percent of GDP is 4.8 percent in the FY 2011 budget request, below the post-World War II average of 6.5 percent. Not including war funding, defense spending is 3.8 percent of GDP. This compares to the peacetime average since World War II, excluding the Korean War (FY 1950 to FY 1953) and Vietnam War (FY 1965 to FY 1974), of 5.7 percent of GDP.

The apparent discrepancy between defense spending being at a peak level in inflation-adjusted dollars but not as percent of GDP is due to the different rates of growth in the defense budget and national economic output. As shown in the figure below, national defense spending has grown and declined in cycles since World War II. In recent years, defense spending declined at a real annual rate of 3.1 percent from the previous peak in FY 1985 to the low point in FY 1998. Defense spending then grew at a real annual rate of 5.8 percent from FY 1998 to FY 2011. GDP, in contrast, has grown at a relatively steady pace, averaging real annual growth of 3.2 percent from 1947 to 2010. In periods when defense spending and GDP grow at nearly the same rate, defense spending as a percent of GDP remains relatively constant. But when defense spending grows and GDP grows at an even faster rate, then defense spending as a percent of GDP declines. From the previous peak in defense spending in FY 1985 to the current FY 2011 budget, defense spending grew by 37 percent in real terms compared to 102 percent real growth in GDP over the same period. As a result, the total defense budget as a percent of GDP has fallen from 7.1 to 4.8 percent over that time period because the denominator (GDP) has grown much faster than the numerator (defense spending).

As the topline of the defense budget has varied over time, the way in which money is allocated within the defense budget has also varied. In recent years, funding has

FIGURE 8. SHARE OF DOD (051) BUDGET BY TITLE (includes war funding)



shifted away from acquisition (procurement and RDT&E) and toward operation and support (operation and maintenance and military personnel). At the previous peak in defense spending in FY 1985, operations and support garnered 51 percent of the total DoD budget versus 45 percent for acquisition. In the FY 2011 budget, 67 percent is allocated for operations and support and 30 percent for acquisition—or 62 percent and 34 percent, respectively, if war funding is excluded.

II. DETAILS OF THE BUDGET REQUEST

The following sections provide a brief analysis of how major funding categories and programs fare under the administration's FY 2011 budget request.

OPERATIONS AND SUPPORT

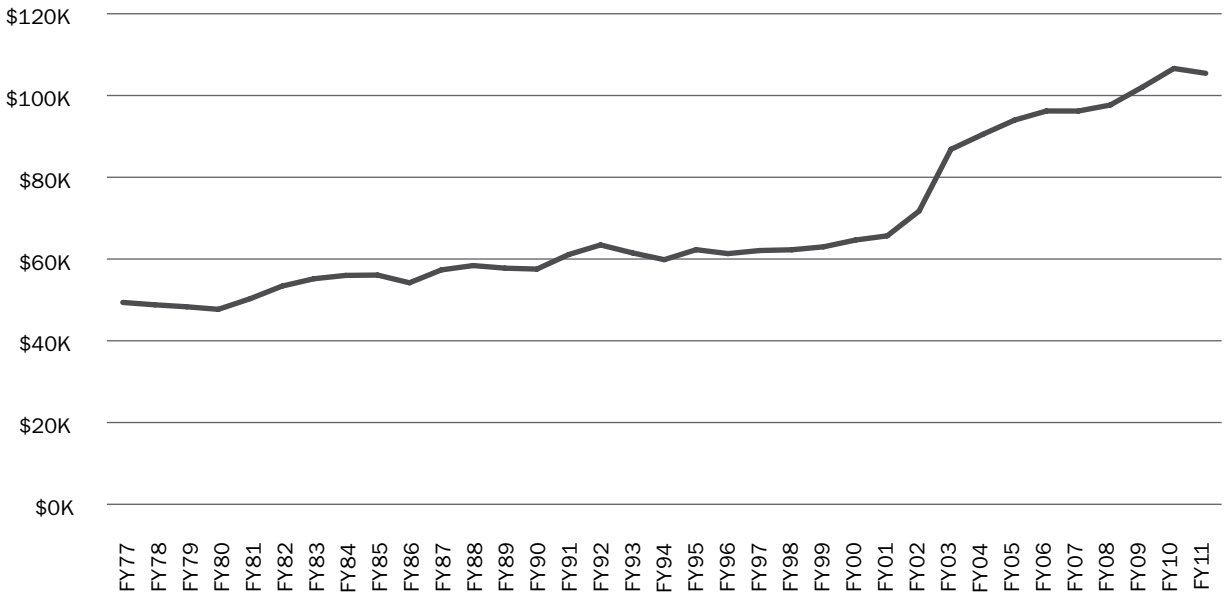
The operations and support (O&S) portion of the budget encompasses both the operation and maintenance (O&M) and military personnel accounts. It covers the cost of recruiting, training, and caring for military personnel; purchasing fuel and expendable items consumed during operations; maintenance of equipment; and real-world operations in Iraq, Afghanistan, and elsewhere. The readiness of the US military to fight effectively on short notice is largely dependent on the provision of adequate funding for O&S. In addition, this portion of the budget pays for the salaries of most DoD civilian employees and covers the cost of many programs less immediately related to near-term readiness, such as military health care, base operations and support, and infrastructure activities.

The FY 2011 base defense budget requests a total of $339 billion in discretionary funding for O&S, including $200 billion for O&M and $139 billion for military personnel. An additional $138 billion is requested for the wars in Iraq and Afghanistan, and $6 billion is requested in mandatory funding primarily for accrual payments to the Military Retirement Fund. Even when mandatory and war funding are not included, this is a high level of O&S funding by historical standards and represents a 4.9 percent real increase compared to O&S funding in FY 2010. Moreover, the level of O&S funding in the base budget has increased by 46 percent in real terms since the FY 2000 despite the fact that the overall size of the active-duty military has remained relatively constant.

Military Personnel

The FY 2011 base budget request proposes $139 billion in Military Personnel discretionary funding, a 2.1 percent real increase over last year's budget. It includes $104 billion in pay and allowances for active-duty troops, $19 billion for Guard and Reserve personnel, and $4 billion for permanent change of station (PCS) travel. An additional $5 billion is requested in mandatory funding for the Military Retirement Fund, and $15.3 billion is requested for Overseas Contingency Operations. More than three quarters of the Military Personnel war funding is directed to the Army.

FIGURE 9. MILITARY PERSONNEL (MILPERS) PER TROOP
(*in FY 2011 dollars, includes war funding*)



The total active-duty end strength funded through the base budget is unchanged from FY 2010 at 1,405,000. The number of full-time guard and reserve personnel remains nearly constant as well at 79,000. An additional 26,400 troops are funded on a temporary basis through the FY 2011 OCO budget, 22,000 in the Army and 4,400 in the Navy, at a cost of $2.6 billion.

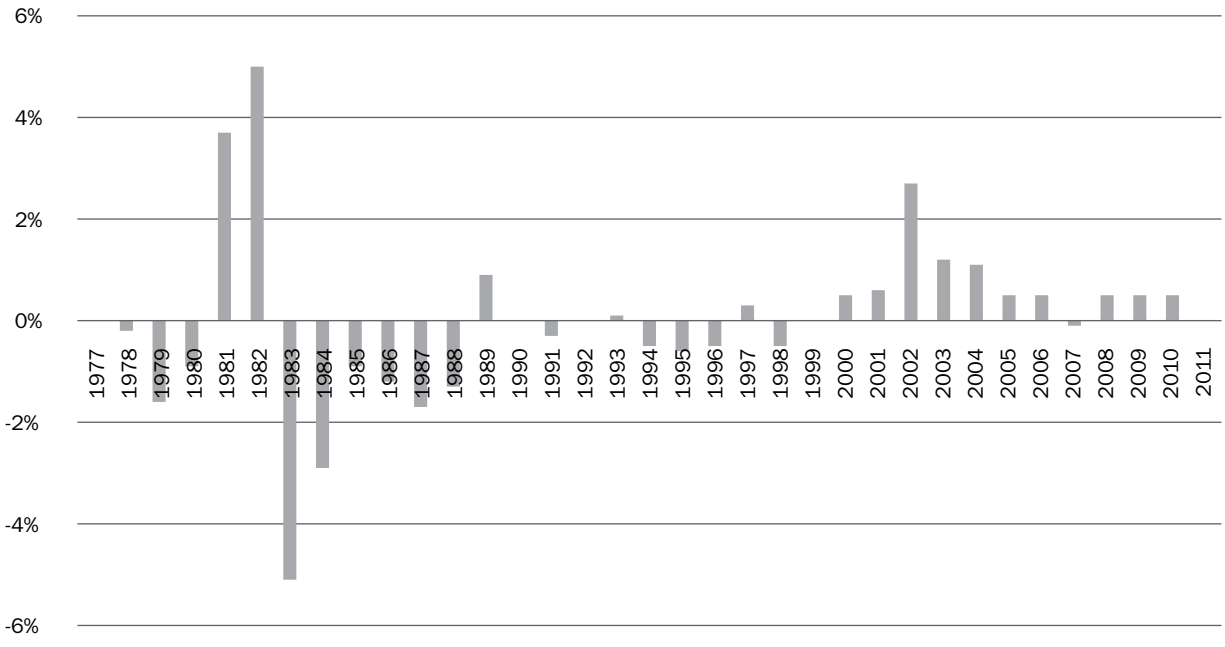
On a per-troop basis, the military personnel account has risen to record levels over the past decade. Since FY 2000, military personnel spending on a per-troop basis has risen at a real annual rate of 4.5 percent (or 3.4 percent if war funding is excluded). This increase has been driven by several factors, including several years of pay raises exceeding the Employment Cost Index, new and enhanced benefits for active-duty troops and retirees, and growing healthcare costs.

Trends in Military Pay and Benefits

The FY 2011 budget proposes a 1.4 percent pay increase for the military, which is equal to the Employment Cost Index (ECI) for wages and salaries of private industry workers.[13] In the FY 2004 National Defense Authorization Act, Congress mandated that military pay raises equal or exceed the ECI in all future budget submissions. As shown

[13] The ECI is a measure of the change in labor costs in the civilian economy, which includes the private sector and state and local governments but not the federal government. The General Schedule (GS) pay scale is used to determine the compensation of most federal civilian employees.

FIGURE 10. DIFFERENCE BETWEEN MILITARY PAY RAISE AND ECI



in the figure above, military pay raises have varied considerably from the ECI in the past, with raises falling below the ECI for much of the 1980s but tracking more closely during the 1990s. Since FY 2000, however, Congress has approved pay increases of 0.5 percent or more above the ECI nearly every year.[14] Military pay increases above the ECI have both a compounding and cumulative effect on the military personnel budget—cumulative because a raise in one year increases payroll costs in all future years and compounding because raises build on each other year after year.

Military personnel costs have also increased due to a number of additional military benefits that were enhanced over the past decade. These include: a raise in retirement pay from 40 to 50 percent of base pay after 20 years of service; an increase in the retirement pay for surviving spouses from 35 to 55 percent of the deceased service member's retirement pay; changes to allow concurrent receipt of military retirement pay and veteran's compensation for some retirees; and a reduction in the age at which reservists can begin receiving retirement pay.

[14] Military pay raises are compared to the ECI for the 12-month period ending the September before the budget request is released, as required by law. ECI data are from the Bureau of Labor Statistic's Employment Cost Index Historical Listing, Table 9. (http://www.bls.gov/web/eci/ecicois.pdf). Military pay raise data are from the DoD Nation Defense Budget Estimates (Green Book) for FY 2011, page 56.

Military Healthcare

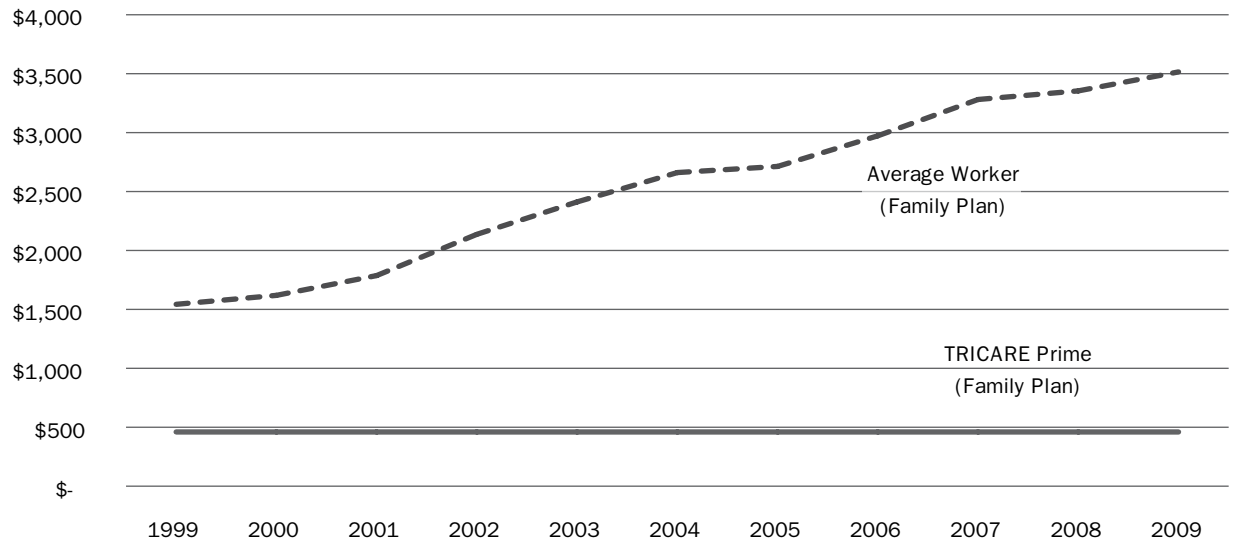
Military healthcare costs have also grown at a pace significantly above the rate of inflation. Total military healthcare costs are up 3.4 percent in real terms for FY 2011 to a total of $50.7 billion—nearly one tenth of the total DoD base budget. The Defense Health Program, funded through the O&M portion of the budget, increased at a real annual rate of 6.9 percent from FY 2000 to FY 2010. The president's budget request expands the Defense Health Program by another 4.8 percent in FY 2011.

The FY 2011 budget request does little to slow the rate of growth in military healthcare costs. DoD attributes this growth to new and expanded benefits, general healthcare cost inflation, and the increase in usage of healthcare benefits by eligible beneficiaries. The DoD healthcare system covers 9.5 million eligible beneficiaries, including active-duty troops, retirees, members of the guard and reserve, and dependents. In FY 2011 the Department will operate 56 inpatient hospitals, 363 military medical clinics, and 275 dental clinics around the world. Treatment of beneficiaries at private-sector facilities is funded through the TRICARE program.[15] The budget request projects that the number of outpatient visits at military treatment facilities will remain relatively flat at 34.0 million visits in FY 2011 but the number of outpatient visits to private-sector care facilities will jump by more than 9 percent to 56.6 million visits.[16] Overall, DoD

[15] The number of DoD hospitals is down from 59 in FY 2010, due to planned closures and consolidations as part of the 2005 BRAC.

[16] DoD, *Operation and Maintenance Overview: Fiscal Year 2011 Budget Estimates* (Arlington VA: DoD, February 2010), p. 194. (accessed at http://comptroller.defense.gov/defbudget/fy2011/fy2011_OM_Overview.pdf).

FIGURE 11. COMPARISON OF ANNUAL HEALTH INSURANCE PREMIUMS
(amount paid by the beneficiary)



projects that healthcare costs will continue to increase at a rate of 5 to 7 percent annually through FY 2015.[17]

The TRICARE program has become an increasingly expensive benefit to provide for members of the military and military retirees. Annual premiums and co-pays for TRICARE Prime, the basic HMO-like healthcare plan, have not increased since its inception in FY 1995. TRICARE Prime is free for active-duty members and their dependents, with no annual premium or co-pays for use. The annual premium for military retirees is $460 for a family, or $38.33 per month, with a co-pay of $12 per doctor visit and no annual deductibles. Prescription medications are free if filled at a military installation and are $3 for generics and $9 for brand-name if filled at an in-network TRICARE pharmacy.[18]

Because TRICARE fees have not increased since FY 1995, the gap between the average annual health insurance premiums paid by American workers and the cost of TRICARE Prime has widened. As shown in the figure above, this widening gap makes the use of TRICARE increasingly attractive for military retirees.[19] A 2007 study by the RAND Corporation found that 76 percent of military retirees have access to health insurance through a civilian employer or other group plan, yet only 42 percent of military retirees are enrolled in a civilian insurance plan. Of those enrolled in a civilian plan and paying a premium, 51 percent said they would give up their civilian plan if their premium rose by 25 percent or more.[20] In the ten years from 1999 to 2009, the average health insurance premium paid by American workers grew at an annual rate of 8.6 percent for families and 9.4 percent for singles. If these trends continue, DoD should expect that more and more retirees will give up their civilian health insurance in favor of a less expensive TRICARE plan, which will only add to the already rising cost of military healthcare.

Another reason for growth in military healthcare costs in recent years is the TRICARE for Life program, enacted by Congress in the National Defense Authorization Act of FY 2001. TRICARE for Life provides premium-free supplemental insurance for military retirees enrolled in Medicare and applies retroactively to retirees who retired before the benefit was enacted. As a 2004 RAND study noted, the newly added benefit "provides Medicare-eligible military retirees age 65 or older with one of the most comprehensive health insurance benefit packages in the United States."[21] Accrual payments for this fund total $10.9 billion in the FY 2011 request, more than one-fifth of the overall military healthcare budget.

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[17] DoD, *DoD FY 2011 Budget Request Overview* (Arlington VA: DoD, February 2010), p. 3–3.

[18] TRICARE costs taken from DoD's TRICARE: Summary of Beneficiary Costs publication, accessed at http://tricare.mil/mybenefit/Download/Forms/Summary_of_Beneficiary_Costs_Unlinked.pdf

[19] Data on average health insurance premiums paid by workers from Kaiser and HR&ET, *Employer Health Benefits 2009 Annual Survey* (Menlo Park, CA: Kaiser, 2009), pp. 70–1.

[20] Louis T. Mariano, et al., *Civilian Health Insurance Options of Military Retirees: A Pilot Study* (Santa Monica: RAND, 2007), pp. 28–47.

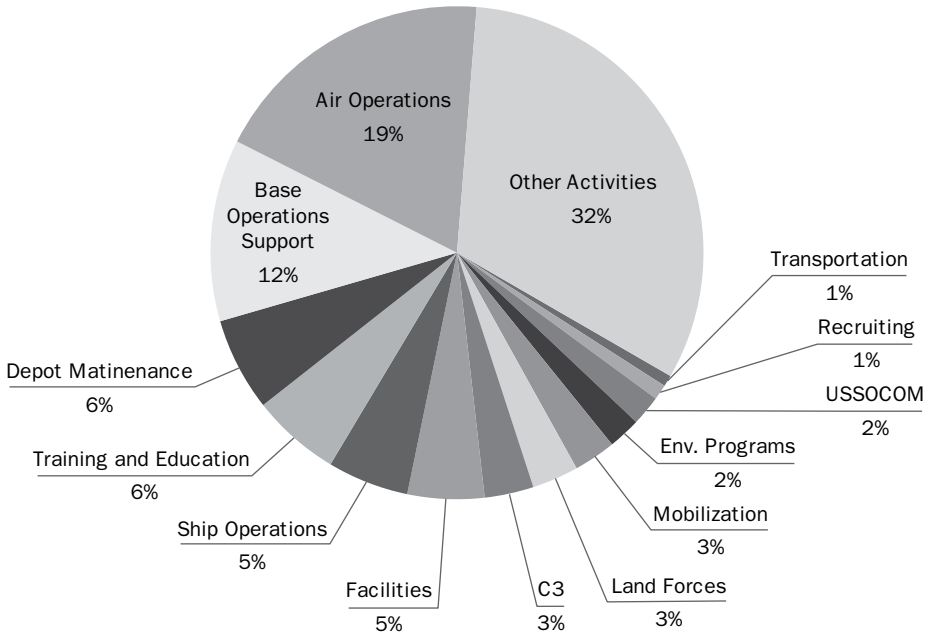
[21] Michael Schoenbaum et. al., *Health Benefits for Medicare-Eligible Military Retirees: Rationalizing TRICARE for Life* (Santa Monica: RAND, 2004), p. 1.

Operation and Maintenance

The FY 2011 request provides some $200 billion for O&M in the base discretionary budget, up 7.4 percent in real terms from FY 2010, and $628 million in base mandatory funding. An additional $117 billion in O&M funding is included for operations in Iraq and Afghanistan. The level of O&M funding in the FY 2011 budget request is high by historical standards and works out to about $210,000 per active-duty troop, or $133,000 if war funding is excluded. In comparison, DoD provided $64,000 in O&M funding per troop in FY 1990, the year the United States began sending forces to the Persian Gulf in preparation for Operation Desert Storm, and $95,000 per troop in FY 2000, just prior to the invasion of Afghanistan (all figures are in FY 2011 dollars).

The base budget for O&M provides for the peacetime operation, training, and support of military forces around the world. The budget for air operations ($37.7 billion) funds the day-to-day operation, maintenance, training, and support of aviation assets in the Army, Navy, Air Force, and Marine Corps. While overall funding for air operations is up 7.3 percent in real terms, a key measure of operational tempo—flying hours per crew per month—is down by 26 percent and 19 percent respectively for active-duty Air Force bombers and fighters. Army and Navy flying hours per crew per month are up slightly by 2.5 and 3.6 percent, respectively. Funding for ship operations is up 12 percent in real terms to $10.7 billion, while a key measure of operational tempo—the number of steaming days per quarter—remains at the same level as FY 2010. O&M funding for

FIGURE 12. FY 2011 BASE BUDGET REQUEST FOR O&M BY ACTIVITY



land forces grows by 3 percent in real terms to $6.1 billion with a 5.5 percent increase in OPTEMPO miles, the Army's measure of operational tempo for active and reserve forces, and no change in USMC deployable days, the Marine Corps' preferred metric.[22] Despite a collective increase of $3.8 billion in real terms for air, ship, and land forces operational activities, the budget request is only sufficient to fund a similar or, in some cases, significantly lower operational tempo compared to FY 2010.

The second largest O&M activity, base operations support, is up 6.3 percent in real terms to $23.9 billion. Base operations and support funds the personnel and infrastructure needed to maintain mission capability in DoD's network of 256 major installations around the world. Training and education, which funds the Service academies, schools, and war colleges, also receives a significant increase in the FY 2011 request, up 10.7 percent in real terms to $11.7 billion. The only major O&M activity to see a decline in funding in the FY 2011 request is Environmental Programs, which declines by 4.8 percent in real terms.

In addition to the base budget for O&M, the request includes $117 billion in O&M funding for Overseas Contingency Operations (OCO). This includes $11.6 billion for the Afghanistan Security Forces Fund, compared to the $9.2 billion enacted and requested in supplemental funding for FY 2010. The request does not include any money for the Pakistan Counterinsurgency Capability Fund, but it does include $2 billion in funding for the Iraq Security Forces Fund, which had been zeroed out in the FY 2010 budget.[23] The OCO budget request also includes $1.4 billion for the Defense Health Program and $457 million for drug interdiction and counter-drug activities. The remaining funds are divided among the Army ($62.6 billion), Air Force ($13.5 billion), Navy ($8.9 billion), Marine Corps ($4.1 billion), Guard and Reserve ($1.4 billion), and defense-wide and other activities ($11.0 billion).

DoD Civilian Personnel

The total cost of DoD civilian personnel in the FY 2011 budget request is $77 billion. Seventy percent of these personnel are funded through the O&M portion of the budget.[24] In ten of the past twelve years, Congress has enacted pay raises for DoD civilians at or above the ECI. As a result, the total cost of DoD civilian personnel has grown by 45 percent in real terms since FY 2000 while the number of personnel employed has grown by just 13 percent. The average cost per DoD civilian is now $98,000, a real increase of 28 percent compared to FY 2000. The FY 2011 request proposes a raise of 1.4 percent for DoD civilians, which equals the ECI and the proposed military pay raise.

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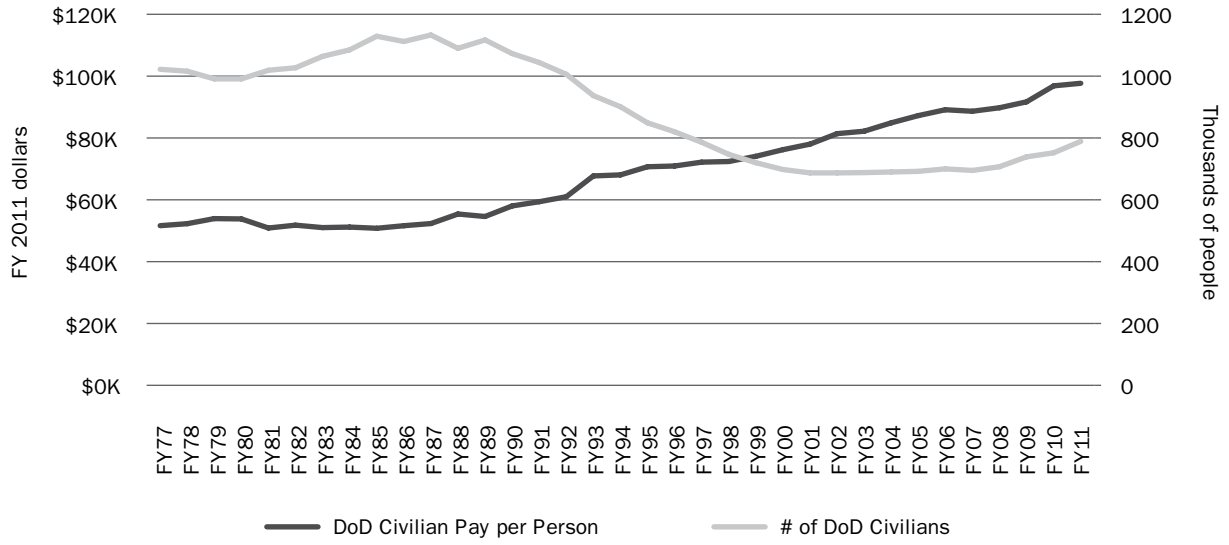
[22] Data on O&M major activities is from DoD, *Operation and Maintenance Overview: Fiscal Year 2011 Budget Estimates* (Arlington VA: DoD, February 2010).

[23] The Iraqi Security Forces Fund also receives $1 billion in the supplemental request for FY 2010, which has not yet been enacted by Congress.

[24] Military personnel costs are funded through the Military Personnel (MILPERS) account. However, DoD civilian personnel costs are funded through several other accounts, primarily O&M.

FIGURE 13. DOD CIVILIAN PERSONNEL



One of the initiatives begun in the FY 2010 budget that continues in the FY 2011 budget request is the effort to grow the civilian workforce through in-sourcing—i.e., replacing contractors with government employees. The total number of DoD civilian personnel declined steadily through the 1990s from 1,073,000 in 1990 to 687,000 in 2001, a reduction of more than a third. This decline corresponded to a similar decline in the end strength of the active-duty military (down 32 percent) and the overall defense budget (down 14 percent in real terms) over the same period. However, as the defense budget and operational tempo of the Department increased, the number of DoD civilians remained relatively constant. The additional workload for the Department, particularly from the 70 percent real increase in acquisitions from FY 2001 to FY 2009, was largely accomplished through the use of contractors. The Department's goal now is to reduce the number of service support contractors from 39 percent of the workforce to the pre-2001 level of 26 percent by FY 2014, which will require hiring 33,400 new civil servants. DoD plans to hire 13,500 new civilians in FY 2010, 6,300 in FY 2011, and a total of 13,600 in FY 2012 to 2014.

The DoD civilian personnel system has been a source of controversy in recent years. Legislation enacted in 2003 gave DoD authority to reform and reorganize the way it managed its civilian workforce. The changes included reducing the time required to hire new personnel; replacing the General Schedule (GS) system for determining pay levels with one that gives managers greater discretion to tie pay to performance; and making it easier to fire civilian workers. The new system, known as the National Security Personnel System (NSPS), was intended to link pay more directly to performance.[25] Government employee unions challenged DoD's proposals for implementing

[25] Wendy Ginsberg, *Pay-for-Performance: The National Security Personnel System* (Washington DC: CRS, September 17, 2008).

the NSPS in court. In March 2009, the Obama Administration announced that it was initiating a review of NSPS and would temporarily suspend converting any additional positions from the GS system to NSPS. Congress directed DoD to transition out of the program in the FY 2010 National Defense Authorization Act. About 225,000 personnel are covered by NSPS, and some are now paid at a higher rate than they will be under the government-wide GS pay scale they are being converted into. The law requires that pay for these employees not be reduced during the conversion, and the FY 2011 budget includes $239 million to cover these additional costs.

Classified O&M

The FY 2011 budget request identifies a total of $18.0 billion in classified O&M funding. A total of $14.6 billion of this sum is funded through the base budget, with the remaining $3.4 billion funded in the OCO budget. Over 95 percent of this classified O&M funding is directed through the defense-wide O&M account, with the remainder through the Navy O&M account. Because of the classified nature of the funding, the programs and activities it supports are not publicly known. The overall level of classified O&M funding represents a real increase of 10 percent over the level of funding in the FY 2010 budget.

ACQUISITION

The acquisition of weapon systems is funded through the research, development, test, and evaluation (RDT&E) and procurement titles of the budget. RDT&E funding is generally used to pay for basic and applied research, technology and component development, and system development. Procurement funding generally supports the purchase of weapon systems that have already been developed and are in production. In many cases, however, the distinctions between these two types of acquisition funding are blurred. Some RDT&E funding is used to procure early production articles for testing purposes that are in fact fully operational systems, and at times, procurement funds are used to pay for further development and testing of systems.

The 2010 Quadrennial Defense Review (QDR) places a high priority on defense acquisitions, specifically rebalancing the acquisition portfolio and reforming the acquisition process:

> The 2010 Quadrennial Defense Review advances two clear objectives. First, to further rebalance the capabilities of America's Armed Forces to prevail in today's wars, while building the capabilities needed to deal with future threats. Second, to further reform the Department's institutions and processes to better support the urgent needs of the warfighter; buy weapons that are usable, affordable, and truly needed; and ensure that taxpayer dollars are spent wisely and responsibly.

Rather than being new objectives for the Department, these represent a continuation of the priorities advanced in last year's budget submission. There is evidence of the QDR's influence on the budget in several areas, such as funding for Long-Range Strike

capabilities (e.g. the Next-Generation Bomber) and increases in rotary wing aircraft and unmanned aerial vehicles (UAVs). Missing from the budget and the QDR is an indication of where the Department intends to take risks—i.e., where it intends to do less in one area in order to free up funding for other priorities. No major weapon systems are terminated in the budget beyond those previously included in the FY 2010 request. Consequently, there are few new starts.

Recapitalization

Another issue the president's budget request does not address is the lagging pace of recapitalization for some types of equipment. For example, the average age of aircraft in the Air Force inventory is twenty-four years and is projected to climb to twenty-seven years by 2020.[26] As Secretary Gates has noted, DoD modernization initiatives have been plagued by the piling on of "exquisite" requirements, which have driven up costs and stretched out procurement schedules.[27] As a result, lower quantities of equipment are being procured, and a bow wave of equipment needs is being pushed out year after year beyond the Future Years Defense Program. The sharp increase in defense spending for procurement and RDT&E since 2001 has not reversed this trend, and the increased usage rates of equipment in the harsh environments of Iraq and Afghanistan have only exacerbated the problem.

The relatively high level of funding allocated to the *development* of new weapon systems is undermining DoD's ability to substantially fund for the *procurement* of new weapon systems and correct the lagging pace of procurements from the past two decades. The budget request begins to reverse this trend by increasing procurement funding and decreasing RDT&E funding. The ratio of procurement to RDT&E has fallen from a peak of 3.5 to 1 during the early 1980s to its current level of 1.5 to 1 in the base budget request for FY 2011. Under the FYDP submitted with the budget, funding for procurement is projected to rise and RDT&E is projected to continue to decline. As a result, the ratio of procurement to RDT&E in the base budget will rise to 2.0 to 1 by FY 2015, the highest level since FY 1990.

Cost Overruns

One of the reasons for the relatively high level of RDT&E funding over the past decade, and one of the key challenges DoD faces in acquisitions, is the chronic issue of cost overruns in major acquisition programs. Of the 92 major acquisition programs included in the December 2009 Selected Acquisitions Report (SAR), 69 (75 percent) have exceeded their baseline program acquisition unit cost (PAUC), and 18 of these (20 percent)

[26] Norton A. Schwartz, *Answers to Advance Questions from Senate Armed Services Committee* (Washington DC: US Senate, July 22, 2008).

[27] Robert Gates, *Defense Budget Recommendation Statement* (Arlington, VA: n/p, April 6, 2009).

are over their baseline by more the 50 percent.[28] The problem appears to be getting worse compared to the previous SAR from September 2008, which reported 63 of 95 programs (66 percent) exceeding their baseline PAUC.

However, this trend may actually be a sign that the Weapon Systems Acquisition Reform Act of 2009 is beginning to work. One of the key provisions of the act was to reform the way DoD estimates the cost of weapon systems. It gives the newly created Director of Cost Assessment and Program Evaluation the authority to prescribe how cost estimates are developed and what confidence levels are used and to conduct independent cost estimates of major defense acquisition programs. Therefore, the increase in programs exceeding their baseline costs in the December 2009 SAR could be the result of more accurate cost estimates now exposing unrealistic baseline cost estimates from years earlier. In other words, a near-term side effect of more accurate cost estimates could be that more cost overruns will be uncovered. But it is too soon to tell if the recent surge in program cost overruns is in fact a result of better cost estimates or poor program performance.

RDT&E

The FY 2011 base defense budget proposes $76.1 billion in funding for RDT&E, which is nearly 14 percent of the total base budget. This represents a 6.0 percent real decrease from FY 2010, but it remains high from an historical perspective. Adjusting for inflation, the previous peak in RDT&E spending was $62.0 billion in FY 1987. Under the FYDP included with the administration's budget request, RDT&E funding would decline in future years to $64.8 billion in FY 2015 (in FY 2011 dollars).

Within the RDT&E budget, the FY 2011 budget request continues the shift in funding away from early research activities (basic research, applied research, and advanced technology demonstration). Over the past decade, this money had been redirected toward later developmental activities (advanced component development, system development and demonstration, and operational system development). However, with the decline in overall RDT&E funding experienced in FY 2010 and proposed in FY 2011, total funding for later developmental activities has also begun to decline. As a share of the RDT&E budget, early research activities have fallen from 21 percent in FY 2000 to 15 percent in the FY 2011 request, and the share allocated for later developmental activities has risen from 52 percent to a peak of 57 percent in FY 2007 before falling to 50 percent in the FY 2011 request. Classified R&D funding has risen steadily over the past decade from 19 percent in FY 2000 to 30 percent of total RDT&E funding in the FY 2011 request.

[28] PAUC is calculated by dividing the total program acquisition cost, including R&D and procurement, by the total quantity of items planned. This accounts for cost increases that can occur due to an increase in quantity, which is not truly a cost overrun. For systems that do not have a projected quantity listed in the SAR, the increase in the total program cost is used instead.

FIGURE 14. RDT&E FUNDING BY BUDGET ACTIVITY
(in FY 2011 dollars, includes war funding)

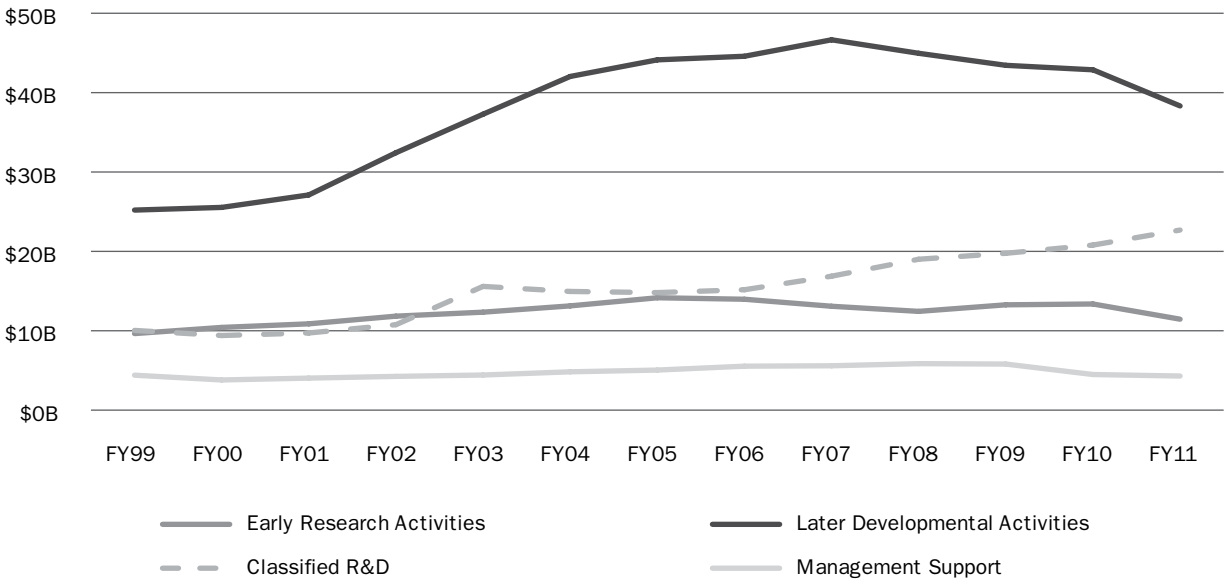
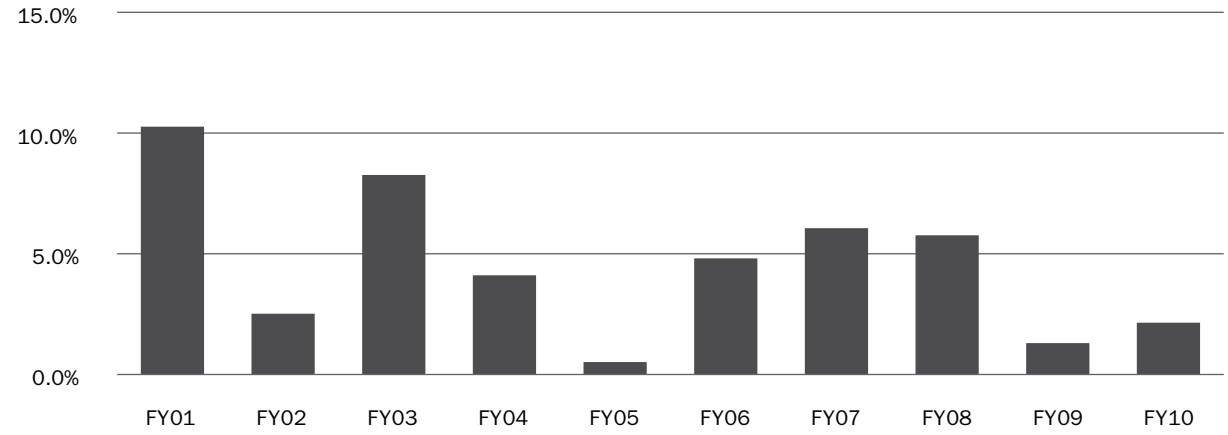


FIGURE 15. INCREASE IN RDT&E FUNDING
(compares request to actual for each year)

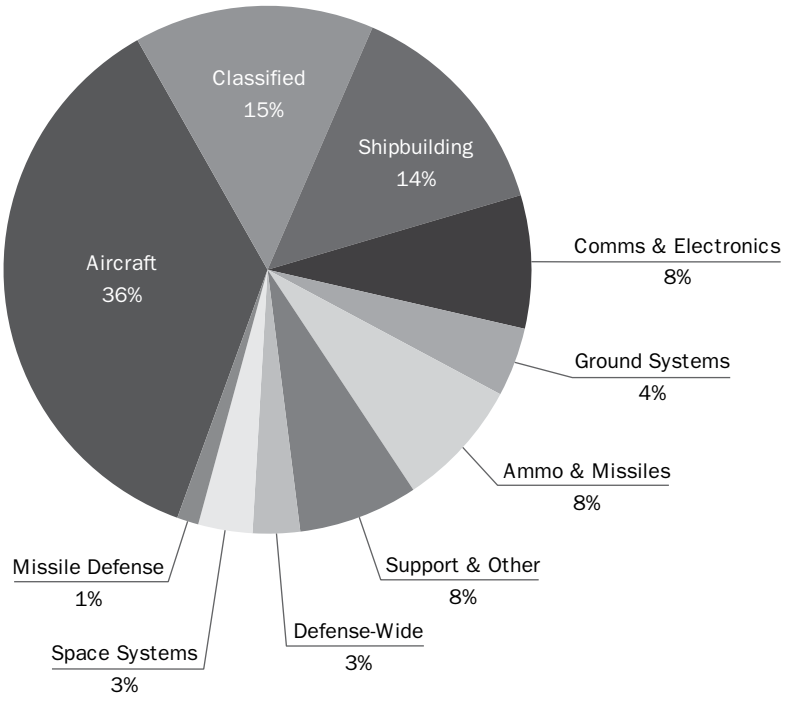


Another notable trend is the consistent increase each year in RDT&E funding from what is included in the president's budget request to what is ultimately granted in budget authority. From FY 2001 to FY 2010, the RDT&E funding enacted increased an average of 4.6 percent each year over what was requested. This increase is due mainly to congressional earmarks added during the appropriations process. Management support and advanced technology demonstration activities have consistently garnered the greatest increases, averaging $1.2 billion and $1.0 billion, respectively, in annual increases. In the FY 2010 budget, Congress added 2.1 percent in RDT&E funding above the administration's request. In light of this trend, it is reasonable to conclude that Congress could add sufficient RDT&E funding in the form of earmarks to offset much of the proposed 6.0 percent real decrease in funding.

Procurement

Procurement funding in the FY 2011 base defense budget request is $112.9 billion, a real increase of 6.6 percent over the FY 2010 base budget. An additional $24.6 billion in procurement funding is included in the OCO request. Despite the number of program cuts and terminations announced last year, procurement spending in the base budget has increased by a total of 8.8 percent under the new administration because reductions

FIGURE 16. FY 2011 BASE PROCUREMENT BUDGET REQUEST BY CATEGORY



and cancellations of some programs have been more than offset by increases in other programs. For example, while the administration successfully ended the F-22 program at 187 aircraft last year, procurement funding for the F-35 Joint Strike Fighter has increased. However, total procurement funding is still substantially below the previous peak of $176.8 billion in FY 1985 (in FY 2011 dollars). The administration's projection for future procurement funding shows steady increases in the base budget of 3.3 percent annually over the FYDP, in real terms.

Aircraft procurements consume 36 percent of total procurement funding, the largest area of procurement spending in the FY 2011 budget request.[29] It includes the procurement and modernization of fixed-wing and rotary-wing aircraft, manned and unmanned, for the Army, Navy, Air Force, and Marine Corps. As a share of total procurement funding, it is essentially unchanged from FY 2000, when aircraft made up 35 percent of the budget. Space systems and classified programs have substantially increased their share of the procurement budget since FY 2000. Space systems rose from 1.5 percent to 3.3 percent, and classified programs rose from 12.8 to 14.7 percent. This may reflect an increased emphasis on intelligence, surveillance, and reconnaissance (ISR) systems that often have a space-based component or are classified. Funding for both ammunition and missiles and communications and electronics fell as a share of the base procurement budget from 10.0 to 7.9 percent and 9.9 to 8.2 percent, respectively. However, these declines have been offset in part by an increase war funding used for these items.

Long-Term Plans

DoD released its Aircraft Investment Plan in conjunction with the FY 2011 budget in February. This plan provides the Services' projections for future aircraft investments up to 30 years into the future. It projects that the total inventory of aircraft will remain relatively flat between now and FY 2020, ranging from a low of 5,268 in FY 2017 to a high of 5,493 in FY 2020. But within that overall number, the plans shows a significant shift from fighter/attack aircraft, which decline by 335 aircraft, to multi-role unmanned aerial systems (UAS)[30], which increase by more than five-fold or 404 aircraft. Other highlights of the plan include:

1. Increasing the capacity of unmanned systems for ISR from 300 aircraft in FY 2011 to more than 800 in FY 2020
2. Replacing the aging tanker fleet by procuring 109 KC-X aircraft by FY 2020

[29] This figure includes only funding from the procurement title in the defense budget. In some cases RDT&E funding is used to procure weapon systems, particularly test articles or early production items.

[30] DoD's definition of "multi-role UASs" only includes the Air Force's MQ-9 Reaper and to-be-defined Navy and Marine Corps UASs. Other unmanned systems, such as the RQ-4 Globalhawk and MQ-1 Predator, are categorized as ISR/C2.

3. Increasing the inventory of 5th generation fighter/attack aircraft, namely the F-35 and F-22, from 7 percent of the current force to 34 percent by FY 2020
4. Modernizing long-range strike capabilities by identifying a replacement aircraft for the legacy bomber fleet.

The Navy also submitted its FY 2011 long-term shipbuilding plan to Congress in conjunction with the budget request. The new shipbuilding plan uses the Navy's requirement for a 313-ship fleet, originally articulated in the FY 2005 Naval Force Structure Assessment, as its baseline. The new plan achieves a peak inventory of 320 ships in FY 2024 but averages just 303 ships between FY 2020 and FY 2040. The plan includes recapitalization of the Ohio-class ballistic missile submarine fleet (SSBNs), which it notes must begin no later than FY 2019 to ensure replacements are available in time for submarines that will begin to retire in FY 2027. The plan also includes support for the new missile defense plan in Europe, which will initially rely on sea-based Aegis Ballistic Missile Defense (BMD). According to the Navy's own estimates, the shipbuilding plan will require an average of $16.1 billion (in FY 2011 dollars) of new ship construction funding over the next 30 years, compared to the $13.8 billion provided for new ship construction funding in the FY 2011 budget request and the average of $14.0 billion (in FY 2011 dollars) projected over the FYDP.[31] The Navy is therefore assuming that funding for new ship construction will average 18 percent more, or $16.5 billion, over the 25-year period beyond the FYDP than it does during the FYDP.

A more detailed discussion of the status and future plans for major weapon systems is included in Chapter 3: Major Acquisition Programs.

MILITARY CONSTRUCTION AND FAMILY HOUSING

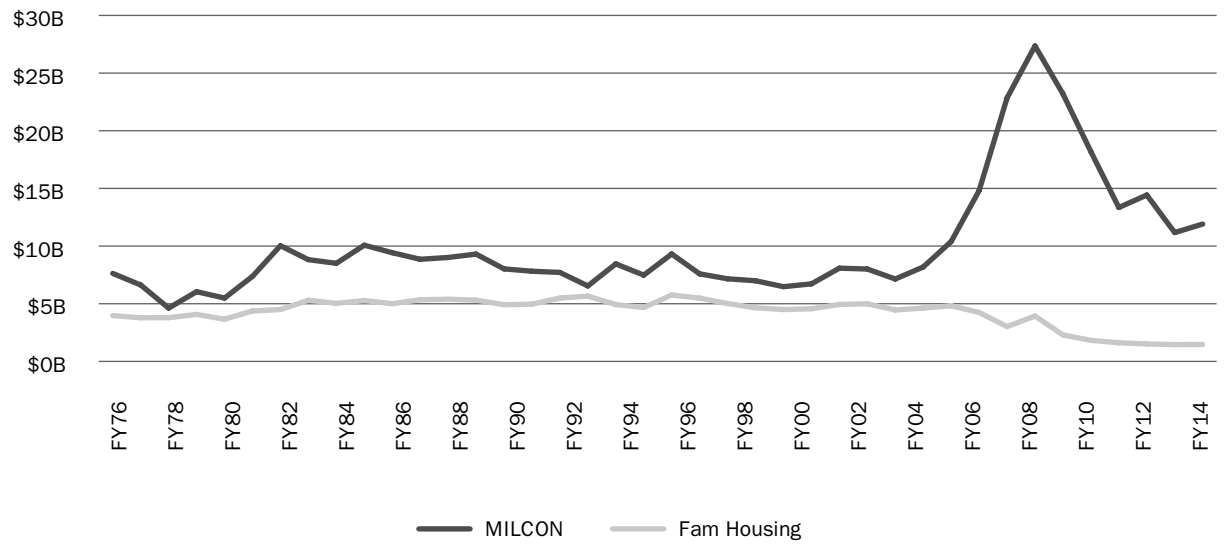
The FY 2011 base budget requests a total of $16.9 billion for military construction (MILCON) and $1.8 billion for family housing. An additional $1.2 billion in MILCON funding is included in the OCO request. While the base MILCON budget declines by 20 percent in real terms from FY 2010, it is still near the highest level of funding for military construction since the early 1950s. The FYDP projects a continued decline in both military construction and family housing, falling to $11.9 billion and $1.5 billion respectively in FY 2015 (in FY 2011 dollars).

BRAC

The surge and subsequent decline in MILCON funding since FY 2006 has been driven primarily by the 2005 base realignment and closure (BRAC) process. Four previous

[31] DoN, *Report to Congress on Annual Long-Range Plan for Construction of Naval Vessels for FY 2011* (Arlington, VA: DoD, February 2010).

FIGURE 17. FY 2011 BASE PROCUREMENT BUDGET REQUEST BY CATEGORY



rounds of BRACs begun in 1988, 1991, 1993, and 1995 resulted in the closure of ninety-seven major bases (equivalent to about 21 percent of DoD's domestic basing structure). The 2005 round identified twenty-two major bases for closure. Over the long term, base closures save money, but there are substantial upfront costs associated with the BRAC process related to environmental cleanup and the need to reconstitute, at remaining bases, some capabilities existing at bases selected for closure.

The FY 2011 request includes $2.7 billion in BRAC funding in the MILCON budget. Spending related to the 2005 BRAC has totaled $33 billion to date, with funding peaking in FY 2009 at $9.2 billion (in FY 2011 dollars). By statutory requirement, DoD must complete its implementation of all BRAC recommendations by the end of FY 2011, meaning that FY 2011 will be the last year of significant BRAC funding. The FYDP shows residual funding averaging $175 million per year for FY 2012 to FY 2015. The total cost of the 2005 BRAC is now estimated to exceed $36 billion, compared to the $23.7 billion original estimate of the Commission (in FY 2011 dollars). With this revised cost figure, the 2005 BRAC will exceed the cost of all previous BRACs combined. As the costs of implementing the BRAC recommendations have increased, the estimated savings have decreased. The commission originally estimated that their recommendations would result in a net savings of $40.1 billion (in FY 2011 dollars) on a 20-year net present value basis.[32] The Government Accountability Office (GAO) now estimates the savings to be $12.9 billion.[33]

[32] Defense Base Realignment and Closure Commission, *2005 Defense Base Closure and Realignment Commission Report* (Arlington, VA, September 8, 2005), p. N-1.

[33] GAO, *Military Base Realignments and Closures: Estimated Costs Have Increased While Savings Estimates Have Decreased Since Fiscal Year 2009* (Washington DC: GAO, November 13, 2009), p. 4. (accessed at http://www.gao.gov/new.items/d1098r.pdf)

Other MILCON Priorities

The FY 2011 MILCON budget request includes funding to begin a five-year plan to replace or recapitalize over half of the 191 prekindergarten through 12th grade schools operated by the DoD Education Activity (DoDEA). The FY 2011 request includes $439 million to replace or modernize a total of ten schools located in Georgia, North Carolina, Virginia, New York, Belgium, the United Kingdom, Germany, and Puerto Rico.

The FY 2011 request also includes funding for the planned movement of some 8,000 marines and their 9,000 dependents from Okinawa to Guam. The agreement to move these marines was part of a 2006 accord between Japan and the United States to reduce the number of US troops stationed in Japan while still maintaining a military presence in the region. Japan agreed to pay $6.1 billion of the total cost, with the remaining $4.2 billion funded by the United States. In recent months, the newly elected government of Japan has expressed reservations about the existing agreement, citing concerns over the relocation of the Marine Corps Air Station Futenma, which could have derailed the planned move to Guam. On May 28, 2010, the United States and Japan issued a joint statement indicating that the Japanese government will accept the plan with some modifications.[34] However, days later Japanese Prime Minister Yukio Hatoyama resigned in the face of mounting public opposition, casting new doubt over the fate of the agreement.

[34] Department of State, *Joint Statement of the U.S.-Japan Security Consultative Committee* (Washington DC, May 27, 2010). Accessed at http://www.state.gov/r/pa/prs/ps/2010/05/142318.htm.

III. MAJOR ACQUISITION PROGRAMS

AIRCRAFT

AH-64 APACHE: The FY 2011 budget request provides $1.09 billion for procurement and modifications of the Army's fleet of AH-64 Apache attack helicopters and $93 million for continued RDT&E. These upgrades include the addition of Target Acquisition Designation Sight (TADS)/Pilot Night Vision Sensors (PNVS), as well as a variety of safety and reliability improvements. Specifically, the budget request supports the remanufacture of 16 helicopters to the more capable AH-64D (Longbow) Block 3 configuration.[35] The Apache Block III program reported a critical Nunn-McCurdy breach[36] in the most recent SAR. The increase is due to the addition of 56 new aircraft to the program, which are significantly more expensive than the remanufactured aircraft that were already part of the baseline program. As part of the program restructuring, DoD is splitting the program into two subprograms for the new build aircraft and the remanufactured aircraft.

B-2 SPIRIT MODERNIZATION: The administration is requesting $350 million for the B-2 bomber modernization program in FY 2011 for the development and procurement of modifications and upgrades to the existing fleet of 20 aircraft.[37] RDT&E funding is down from $407 million in FY 2010 to $260 million in FY 2011 due to the planned completion of the Radar Modernization Program development. Work continues in FY 2011 on airframe and avionics improvements, the Defensive Management System, and satellite communications upgrades. The total of $2.39 billion is planned for B-2 modernization over the FYDP.

C-130J HERCULES: The FY 2011 budget continues the procurement of C-130J aircraft for the Air Force, funding a total of 17 aircraft. The C-130 first entered service in 1957

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[35] The descriptive text in DoD's *Program Acquisition Costs by Weapon System* (February 2010, page 1-10) lists the number of Apaches being remanufactured as eight. However, both the table on that same page and the Army's budget justification document (Aircraft Procurement, Army page 37) list the number of aircraft as 16.

[36] A Nunn-McCurdy breach refers to a breach of the statutory limits for cost growth in defense acquisition programs. The threshold for a "significant" cost growth breach is an increase in the program acquisition unit cost (PAUC) or the average procurement unit cost (APUC) of 15 percent over the current baseline or 30 percent over the original baseline. Similarly, a "critical" cost growth breach is an increase of 25 percent over the current baseline or 50 percent over the original baseline. A significant Nunn-McCurdy breach requires notification of Congress. A critical Nunn-McCurdy breach requires notification of Congress and recertification of the program, among other things.

[37] A total of 21 B-2 bombers were produced. However, one aircraft crashed in February 2008.

and has been in continuous production for more than 50 years. The FYDP projects that an additional 40 aircraft will be procured from FY 2012 to FY 2015.

C-17 GLOBEMASTER: The administration's request includes $14 million for production shutdown activities. To date, the Air Force has procured a total of 223 C-17s. In the FY 2007 budget request, DoD officials concluded that a fleet of 180 C-17s was sufficient to meet the nation's airlift requirements as determined by the 2005 Mobility Capabilities Study. To date, a total of 25 C-17s have been sold abroad. DoD notified Congress on April 26, 2010, that it is considering the sale of 10 C-17s to India. The production line in Long Beach, California is scheduled to shut down in 2013 if no additional orders are received.[38]

C-27J SPARTAN JOINT CARGO AIRCRAFT (JCA): The FY 2010 budget includes $378 million for the JCA. The JCA is a commercial derivative aircraft that provides an intra-theater, light cargo airlift capability. The program had previously been funded through the Army, but the FY 2010 request moved the program to the Air Force. The budget provides for the procurement of eight additional aircraft in FY 2011.

C-5 MODERNIZATION: The C-5 modernization initiative consists of two programs. The Avionics Modernization Program (AMP) upgrades the cockpit, flight control system, navigation system, and safety equipment at a total projected cost of $1.3 billion. The Reliability Enhancement and Re-engining Program (RERP) replaces the propulsion system and makes numerous upgrades to the structure, landing gear, hydraulics, and electrical systems at a total projected cost of $7.3 billion. Virtually all C-5s in the inventory will receive the AMP upgrades, while only 52 aircraft (primarily C-5Bs) are planned to receive the RERP upgrade. The FY 2011 budget includes $1.0 billion in funding for C-5 modernization.

CH-47 CHINOOK: The Army is requesting a total of $1.18 billion in the FY 2011 base budget and $71 million in the OCO budget to purchase 31 new CH-47F helicopters and remanufacture 11 additional aircraft. An additional $149 million is included for modifications to existing aircraft, and $21 million is included for continued R&D. The CH-47F is used to transport troops, ammunition, and other supplies in support of combat operations. Funding for the CH-47 totals $1.4 billion in FY 2011 and is projected to stay near or slightly below that level for the remainder of the FYDP.

E/A-18G GROWLER: The FY 2011 budget includes a total of $1.1 billion for the E/A-18G program. This variant of the F/A-18 is intended to replace the EA-6B in the electronic warfare role. The request includes $1.08 billion to procure 12 of these aircraft and $22 million for continued R&D. The Navy intends to buy an additional 24 Growlers in FY 2012.

[38] According to press reports, see http://www.flightglobal.com/articles/2010/04/26/341101/us-congress-notified-of-potential-c-17-sale-to-india.html

F/A-18E/F HORNET: The administration is requesting $2.0 billion for the F/A-18E/F aircraft program in FY 2011, including $167 million for continued development, $41 million for spares, and $1.79 billion to procure 22 additional 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 wings. DoD recently certified the multiyear procurement (MYP) request for the combined F/A-18E/F and E/A-18G program, which along with Congressional approval will give the Navy the authority to enter into a four-year contract (FY 2010 to FY 2013) for 124 additional aircraft.[39]

F-35 JOINT STRIKE FIGHTER: The F-35 is a Joint acquisition program, with separate variants being produced for the Air Force, Navy, and Marine Corps. It is intended to replace the A-10, F-16, AV-8B (Harrier), and F/A-18C/D. The proposed FY 2011 budget provides a total of $11.5 billion for the F-35 program. It includes the procurement of a total of 20 aircraft for the Navy and Marine Corps and 23 aircraft for the Air Force. This will bring the cumulative total to 101 aircraft procured since FY 2007, with a total buy of 2,457 planned (including test articles). Over the past year, DoD has conducted an independent review of the F-35 program resulting in a new cost estimate, a Nunn-McCurdy breach, and a restructuring of the program. The new cost estimate submitted to Congress with the Nunn-McCurdy breach recertification is $336 billion (in FY 2011 dollars) for the total program—56 percent higher in real terms than the original estimate in FY 2002. The total number of aircraft planned has fallen by 14 percent since the original estimate. As a result, the total program cost per aircraft (including RDT&E and procurement costs) has risen 82 percent in real terms from $75 million per plane to $137 million per plane (in FY 2011 dollars).

KC-X AERIAL REFUELING TANKER: A new tanker is needed to replace the Air Force's existing fleet of over 500 KC-135 tankers. In March 2008, the Air Force selected a team led by Northrop Grumman and the European Aeronautic Defense and Space (EADS) Company to produce the KC-X Aerial Refueling Tanker. Boeing subsequently protested this decision, and the GAO ruled in its favor, forcing the Air Force to recomplete the contract. A draft request for proposals (RFP) was released in late 2009 and the final RFP was released in early 2010. Northrop Grumman withdrew from the competition in March, and subsequently EADS announced that it would enter the competition alone. Proposals are now due in July with contract award expected later in 2010. The FY 2011 request includes $864 million in RDT&E funding to begin development work. The total program cost is expected to exceed $35 billion for 179 aircraft.

[39] DoD, *News Release: DOD Certifies F/A-18 Multi-year Procurement* (Arlington, VA: DoD, May 14, 2010), accessed at http://www.defense.gov/releases/release.aspx?releaseid=13531.

MH-60R AND MH-60S SEA HAWK: The FY 2011 budget request provides continued funding for the Navy's MH-60R multi-mission helicopter and MH-60S fleet combat support helicopter programs. The MH-60R program receives $1.16 billion in funding for 24 aircraft, and the MH-60S program receives $589 million for 18 aircraft. Both programs are under multi-year procurement contracts that run through the end of FY 2011.

MQ/RQ-1 PREDATOR AND MQ-9 REAPER: The Predator and Reaper Unmanned Aerial Systems (UAS) provide an over-the-horizon, long-endurance reconnaissance and strike capability. The FY 2011 request includes $1.6 billion in the base budget for 62 aircraft and $263 million in the OCO budget for an additional 15 aircraft. DoD's goal is to field a sufficient number of Predator-class UASs to support 50 Combat Air Patrols (CAPs) by the end of FY 2011 and 65 CAPs by the end of FY 2013.

NEXT-GENERATION BOMBER: The FY 2011 budget request includes $199 million in funding to begin early development activities for the Air Force's Next-Generation Bomber (NGB). The NGB is part of a larger long-range strike capability called for in the QDR. The budget calls for a total of $1.7 billion in funding for NGB over the FYDP.

P-8A POSEIDON: The P-8A is a land-based maritime patrol and ISR aircraft derived from the Boeing 737 commercial airliner. It replaces the Navy's existing fleet of P-3s, which date back to the 1960s. The FY 2011 budget request provides $2.9 billion for continued R&D, procurement funding for seven aircraft this year, and advance procurement funding for nine aircraft in FY 2012. The total program cost is projected to be $32.7 billion (in FY 2011 dollars) for 122 aircraft.

RQ-7 SHADOW/RQ-11 RAVEN: The Raven is a small, backpack-portable UAV for use at the battalion level and below to enhance "over the hill" situational awareness. The Shadow is a larger, more capable UAV that provides force protection, reconnaissance, and target acquisition. The base budget requests for the Army and Marine Corps provide $66 million for continued R&D and the procurement of 328 Raven aircraft. No Shadow aircraft are procured in the FY 2011 budget, although continued RDT&E funding for Shadow is provided. The Army and Marine Corps' OCO budgets provide an additional $24 million in related RDT&E and procurement funding.

RQ-4 GLOBAL HAWK: The Global Hawk UAV provides high-altitude, long-endurance, high-resolution ISR capabilities for the US Air Force. In 2008, the Navy selected the Northrop Grumman-built RQ-4 platform for its Broad Area Maritime Surveillance (BAMS) aircraft program. The FY 2011 budget request includes $1.6 billion in total funding for the procurement of four aircraft and support equipment for the Air Force, modification to existing Air Force aircraft, and continued R&D work for both the Air Force and Navy. The total program cost is projected to be $14.1 billion for the Air Force's Global Hawk and $15.2 billion for the Navy's BAMS (both figures in FY 2011 dollars).

UH-60 BLACK HAWK: The FY 2011 request includes $1.4 billion for the procurement of 74 Blackhawk UH-60 utility helicopters and continued R&D. The Army's cancellation of the $38 billion Comanche reconnaissance/attack helicopter program in 2004 freed up additional funding for a number of other Army helicopter programs, including the UH-60. By comparison, only 17 of these helicopters were procured in FY 2004, before the Comanche's cancellation.

UH-72A LIGHT UTILITY HELICOPTER (LUH): The budget request includes $305 million for the procurement of 50 Light Utility Helicopters. The UH-72A replaces the UH-1 and OH-58 Kiowa Warrior and provides aerial transport for logistical and administrative support. It is a commercial-off-the-shelf aircraft based on the EADS North America Eurocopter EC145. The Army plans to eventually field a fleet of 345 aircraft at a total program cost of $2.0 billion (in FY 2011 dollars).

V-22 OSPREY: The proposed budget provides a total of $2.8 billion in funding for the V-22 tilt-rotor, vertical take-off and landing aircraft. The budget procures 30 Marine Corps (MV-22) versions of the aircraft and 5 Air Force versions of the aircraft (CV-22). The V-22 program suffered from significant technical problems in the past, but is now being used in Iraq, Afghanistan, and, more recently, Haiti. The MV-22 is intended to replace the Marine Corps' CH-46 and CH-53 helicopters. The CV-22 is used for special operations forces (SOF). DoD plans to buy a total of 458 aircraft at a projected cost of $56.3 billion, in FY 2011 dollars.

GROUND SYSTEMS

BRIGADE COMBAT TEAM (BCT) MODERNIZATION: The BCT Modernization program is the follow-on to the Army's now terminated Future Combat System (FCS) program. FCS was the centerpiece of Army plans to equip the future force to be more deployable, lethal, and survivable than today's forces. The FCS program experienced significant cost growth and schedule delays, with costs projected to reach $161 billion or more to equip just one-third of the active-duty Army. The BCT Modernization program leverages FCS technologies to field incremental capabilities more quickly across the force structure. The FY 2011 budget request provides $3.2 billion to procure two Infantry Brigade Combat Teams (IBCTs) worth of Increment 1 equipment. It also continues development and testing of Increment 1 and Increment 2 equipment.

EXPEDITIONARY FIGHTING VEHICLE (EFV): The Marine Corps' EFV is a tracked, amphibious combat vehicle for ship-to-shore operations. It can carry a crew of three, plus seventeen combat-loaded marines, and it will replace the currently fielded Amphibious Assault Vehicle (AAV). The program was restructured in 2007 following a Nunn-McCurdy breach. Due to manufacturing and reliability issues, the initial operational

capability (IOC) date has slipped by five years and R&D costs have more than doubled.[40] The FY 2011 budget request includes $243 million for continued system development and delays initial production until FY 2012. More recently, in a speech to the Navy League, Secretary Gates questioned the need for the EFV and an amphibious assault capability given the most likely scenarios for future conflicts.[41]

FAMILY OF MEDIUM TACTICAL VEHICLES (FMTV): FMTV is a family of 2.5- to 5-ton vehicles that provide unit mobility and resupply of equipment and personnel. The Army developed an up-armored cab for the vehicles based on experiences in Iraq and Afghanistan. BAE Systems won the initial contract for the vehicles, which first went into service in 1996. The Army re-competed the contract in 2009 and awarded a five-year contract to Oshkosh Corporation. BAE Systems filed a protest with the GAO, which ultimately directed the Army to re-evaluate the proposals. In February 2010 the Army conducted the re-evaluation according to the GAO's guidance and again selected Oshkosh as the winner. The FY 2011 budget provides $922 million in the base budget for 2,960 vehicles and $516 million in the OCO budget for 1,692 vehicles.

JOINT LIGHT TACTICAL VEHICLE (JLTV): JLTV is a joint program between the Army and Marine Corps to develop a replacement for the High Mobility Multipurpose Wheeled Vehicle (HMMWV). The program is in technology development and an acquisition milestone B decision is not planned until late in FY 2011. The FY 2011 budget request includes $85 million in RDT&E funding.

M-1 ABRAMS TANK UPGRADE: The budget request provides $291 million to upgrade 21 older M1A2 System Enhancement Package (SEP) tanks. Among other things, upgrades include improved frontal and side armor, a forward-looking infrared sensor, and digitized communications.

MINE RESISTANT AMBUSH PROTECTED (MRAP) VEHICLE: The MRAP family of vehicles is designed to survive IED and ambush attacks. The MRAP program arose from an urgent operational need in Iraq and Afghanistan and was declared to be the Department's highest priority by Secretary Gates in 2007. MRAP vehicles use a "V"-shaped hull to deflect the explosive forces of roadside bombs away from the vehicle. Four categories of MRAPs have been procured of different sizes and for different missions. Contracts have been awarded to multiple vendors for each category of vehicle, and there is no common design across vendors. The most recent version of the MRAP is the MRAP-ATV, an all-terrain version of the vehicle better suited for conditions in Afghanistan. The Department plans to procure nearly 27,000 MRAP vehicles in

[40] GAO, *Defense Acquisitions: Assessments of Selected Weapon Programs* (Washington DC: GAO, March 30, 2009), pp. 77–8.

[41] Robert Gates, *Remarks Delivered at Navy League Sea-Air-Space Exposition* (National Harbor, MD, May 3, 2010), accessed at http://www.defense.gov/speeches/speech.aspx?speechid=1460.

total. The FY 2011 OCO budget requests $3.4 billion for sustainment, upgrade, and overhaul of MRAP vehicles.

STRYKER FAMILY OF ARMORED VEHICLES: The Stryker program is a key element in the Army's transformation plans. The Stryker is intended to provide a relatively light and easily deployable combat vehicle. The FY 2011 request includes $136 million for RDT&E, $293 million in procurement funding for 83 new vehicles, and $7 million for spares.

SHIPBUILDING

CVN-21 CARRIER REPLACEMENT: The administration's FY 2011 budget calls for $2.7 billion in funding for the CVN-21 program. This includes the fourth year of incremental funding for construction of the lead ship of this new class of aircraft carrier (CVN-78), as well as funding to cover the cost of long-lead items for the second ship of this class (CVN-79). The administration has decided to stretch the procurement rate of the replacement carriers to one every five years instead of one every four years, which is sufficient in the long run to maintain a fleet of 11 carriers through 2040. However, this change will result in a temporary decrease to 10 carriers between the USS Enterprise's retirement in 2013 and the USS Ford's (CVN-78) commissioning in 2015.

DDG 1000: The FY 2010 budget request includes $186 million in procurement and $549 million in RDT&E funding for the third and final ship. Unlike the DDG-51 guided-missile destroyer, which is primarily focused on air defense missions, the DDG 1000—formerly the DD(X)—is a multi-mission combatant with a substantial land-attack capability. Previous Navy plans called for buying up to ten DDG 1000s, but the Navy decided to end the program at three due to cost overruns and technological challenges.

DDG-51 AEGIS DESTROYER: The FY 2011 budget request includes $3.0 billion in funding for the procurement of two additional DDG-51 Aegis Destroyers. The ship is armed with a vertical launching system for missiles and a five-inch gun. The program was restarted as part of broader changes to missile defense programs that shift the focus to theater missile defense systems, like Aegis, needed to meet near-term threats. The FYDP projects that the Navy will procure an additional six ships from FY 2012 to FY 2015.

JOINT HIGH SPEED VESSEL (JHSV): The JHSV is a joint Army-Navy program to develop a high-speed, shallow-draft ship for intra-theater transport. Based on a commercial design, the JHSV is relatively low-cost at about $180 million per ship. The FY 2011 budget requests $390 million for two additional ships, one each for the Army and Navy. The first orders were placed in FY 2009, and delivery of the first JHSV is expected in FY 2012.

LITTORAL COMBAT SHIP (LCS): The LCS is a new surface combatant intended to focus on the kinds of threats likely to be confronted in coastal waters, such as mines, diesel submarines, and "swarm attacks" by small boats. Each ship is capable of being equipped with mission modules focused on different types of threats. The Navy has two industry teams, led by Lockheed Martin and General Dynamics, competing to build this new type of ship. A down-select to one design is expected by the end of FY 2010. The proposed FY 2011 budget provides a total of $1.8 billion for the procurement of two LCSs, continued R&D, and advance procurement funding for future orders. The LCS is roughly the size of a frigate (i.e., around 3,000 tons) and more affordable than the much larger (14,000-ton) DDG 1000. The Navy plans to buy a total of 55 LCSs.

SSN-774 VIRGINIA-CLASS SUBMARINE: The administration's FY 2011 request includes $5.4 billion in funding for two Virginia-class attack submarines and advance procurement for future ships. This class of submarines is being built jointly by General Dynamics-Electric Boat of Groton, CT, and Northrop Grumman's Newport News Shipbuilding (NGNN) of Newport News, VA. The Navy has been buying Virginia-class submarines at a rate of one per year and is increasing the production rate to two boats per year in FY 2011 and beyond to achieve cost savings.

SPACE SYSTEMS

ADVANCED EXTREMELY HIGH FREQUENCY (AEHF): The FY 2011 budget request includes $598 million for the AEHF program, which will provide worldwide, survivable, jam-resistant communications at data rates up to five times as high as the Milstar satellites they replace. The constellation was originally planned to include five satellites, but was scaled down to only three satellites when the Transformational Satellite Communications System (TSAT) program was initiated as an early replacement for AEHF. A fourth satellite was added back to the AEHF program as a result of the TSAT program slipping its schedule by a total of six years over a six- year period.[42] The Air Force terminated the TSAT program in 2009 and added two additional satellites to the AEHF program, bringing the total number of planned satellites in the constellation to six. The FY 2011 request funds the on-orbit testing of the first satellite (planned for launch in the fourth quarter of FY 2010), continued assembly and testing of the second and third satellites, and long-lead parts for the fifth satellite.

EVOLVED EXPENDABLE LAUNCH VEHICLE (EELV): The FY 2011 budget provides $1.2 billion for the procurement of three launch vehicles. The EELV program began in the early 1990s to develop a new launch vehicle for medium- to heavy-class satellites. DoD awarded contracts to two teams to develop the Atlas V and Delta IV families of launch

[42] In 2003 the TSAT program projected a first launch date of 2013. By early 2009 the program had slipped the first launch date to 2019.

vehicles, with the idea that having more than one launch vehicle would ensure on-going competition and reduce launch costs. However, this plan relied on a robust commercial space launch market to support two competing launch vehicles. The commercial market did not materialize as planned and, as a result, costs increased significantly above baseline estimates. In December 2006, Boeing and Lockheed merged their respective business units to form the United Launch Alliance, which is now the sole provider of EELV launch services.

GLOBAL POSITIONING SYSTEM (GPS): The FY 2011 request provides a total of $1.3 billion for the GPS program, including the space, control, and user equipment segments. The GPS program has experienced difficulties with delays and cost overruns in the Block IIF satellites. The next generation of Block IIIA satellites, which is part of the budget request, needs to launch on time in order to avoid a risk of degradation or gaps in GPS service.[43]

MOBILE USER OBJECTIVE SYSTEM (MUOS): MUOS is a replacement for the Navy's existing UHF Follow-On (UFO) constellation of narrowband communications satellites. It will provide higher data rates, improved voice quality, and a greater number of connections for mobile users. The first satellite is expected to launch in early FY 2011. Once in orbit, the new capabilities of the system may remain largely unused for several years because the radios needed to access these improved capabilities are being developed as part of the JTRS program, which is many years behind schedule. The FY 2011 budget request includes $911 million for the procurement of the fifth satellite and the launch vehicle for the third satellite.

NATIONAL POLAR-ORBITING OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM (NPOESS): NPOESS is a constellation of weather satellites intended to replace the Defense Meteorological Space Program (DMSP) satellites currently in orbit. It was originally conceived as an inter-agency program with the National Oceanic and Atmospheric Agency (NOAA) and NASA. It was expected to result in a more cost-efficient and integrated system; however, disagreements between DoD, NOAA, and NASA over requirements and repeated cost overruns led to the administration deciding to end the inter-agency program in February of 2010. The government will instead pursue two separate lines of polar-orbiting satellites. The FY 2011 budget request for DoD includes $352 million for NPOESS to continue system development and design.

SPACE-BASED INFRARED SYSTEM (SBIRS)-HIGH: The FY 2011 budget request includes $1.5 billion for the SBIRS-High program. The program aims to field a constellation of satellites to provide improved warning of ballistic missile launches (replacing existing

[43] GAO, *Global Positioning System: Significant Challenges in Sustaining and Upgrading Widely Used Capabilities* (Washington DC: GAO, April 2009).

Defense Support Program satellites), and support national missile defense and intelligence collection efforts. The FY 2011 budget funds procurement of the fourth GEO satellite in the constellation and advance procurement for the fifth. The first GEO satellite is expected to launch in late 2011.

WIDEBAND GLOBAL SATCOM (WGS): The WGS system provides high-data-rate communications for fixed and mobile users and replaces the Defense Satellite Communications System (DSCS) constellation. Three satellites of the WGS constellation are already in orbit. The first is located over the Pacific and covers from the west coast of the United States to Southeast Asia. The second satellite is in CENTCOM and provides coverage to Iraq, Afghanistan, and other parts of Southwest Asia. The third satellite covers the eastern Atlantic region. The FY 2011 budget provides a total of $612 million for integration and testing of the fourth and fifth satellites, procurement of the seventh, and procurement of long-lead parts for the eighth. The fourth satellite is scheduled for launch in late 2011.

MISSILE DEFENSE

AEGIS BALLISTIC MISSILE DEFENSE (BMD): Aegis BMD builds upon the existing Aegis Weapons System to provide a forward-deployable capability to detect, track, and destroy short-, medium-, intermediate-, and some long-range ballistic missiles. The administration includes $1.6 billion in funding for Aegis BMD. This funding continues upgrades of three ships and produces 30 SM-3 Block IB missiles for testing and eight for operational use.

GROUND-BASED MIDCOURSE DEFENSE (GMD): The GMD system provides a ground-based national missile defense system against long-range ballistic missiles. The FY 2011 budget request includes $1.3 billion for GMD. It includes funding to complete the 14 silos at the second missile field in Fort Greely, Alaska and the deployment of 30 interceptor missiles.

JOINT LAND-ATTACK CRUISE MISSILE DEFENSE ELEVATED NETTED SENSOR SYSTEM (JLENS): JLENS is tethered aerostat (i.e. a lighter-than-air vehicle, such as a blimp or balloon) that can stay aloft for up to a month, providing continuous over-the-horizon surveillance in 360 degrees. It is capable of detecting and tracking cruise missiles, UAVs, tactical ballistic missiles, large caliber rockets, and surface moving targets. The FY 2011 budget request provides $373 million in funding for the continued development and testing of the system. The total program is projected to cost $7.4 billion for 16 systems (in FY 2011 dollars).

PATRIOT/MEDIUM EXTENDED AIR DEFENSE SYSTEM (MEADS): Patriot/MEADS is being developed under a memorandum of understanding between the United States, Germany, and Italy. The system is intended to replace the Patriot (US), Hawk (Germany), and Nike Hercules (Italy) air and missile defense systems. The FY 2011 request includes $467 million in RDT&E funding to continue development and complete the Critical Design Review. The US Army is considering transferring the program to the Missile Defense Agency, and MEADS is under review as part of the larger portfolio of air and missile defense systems.

THEATER HIGH ALTITUDE AREA DEFENSE (THAAD): The FY 2011 request includes a total of $1.3 billion for the THAAD program, $859 million of which is for procurement. The level of procurement funding is more than double the level appropriated in FY 2010 and will be used in part to increase production of THAAD missiles from 3 to 4 per month.

COMMUNICATIONS AND ELECTRONICS

FAMILY OF ADVANCED BEYOND-LINE-OF-SIGHT TERMINALS (FAB-T): The FAB-T program was originally planned to include up to four increments of capabilities for protected EHF-band, Ka-band, and Lasercom satellite communications. Since that time, work on Lasercom capabilities has ended, and the high-data-rate ground and airborne terminals have been spun off into separate development efforts. The remaining FAB-T Increment 1 program will produce airborne terminals for the B-2, B-52, and RC-135 and replacement command post terminals on the ground and in the E-4 and E-6 aircraft. These terminals are needed to enable strategic communications over the new AEHF satellite constellation as the existing Milstar constellation reaches the end of its useful life. The FY 2011 budget provides $128 million in funding to continue development efforts and procure one terminal, down sharply from $247 million in FY 2010. The program is projected to cost a total of $4.0 billion (in FY 2011 dollars) to procure 243 terminals.

JOINT TACTICAL RADIO SYSTEM (JTRS): The JTRS program began in 1997 with the goal of producing a family of software-programmable, interoperable radios for use across the DoD. Over the past decade, the program encountered numerous technical and management challenges. It planned to begin low-rate initial production in 2005, but due to delays and a program restructuring in 2006, production of JTRS radios has only recently begun. While JTRS radios are more capable in terms of interoperability, data rates, and other factors, they cost substantially more than legacy radios. For example, the Ground Mobile Radio (JTRS GMR) is projected to cost nearly ten times as much as comparable legacy radios.[44]If the Department maintains its current

[44] GAO, *Defense Acquisitions: Department of Defense Needs Framework for Balancing Investments in Tactical Radios* (Washington DC, August 2008), p. 20.

plan to procure some 330,000 JTRS radios, the total cost of the program is projected to top $32.3 billion (in FY 2011 dollars). The FY 2011 budget request includes $1.1 billion to fund continued development and low-rate initial production (LRIP) of JTRS hardware and software.

NAVY MULTIBAND TERMINAL (NMT): NMT is the Navy's next-generation maritime satellite communications terminal. It will provide Navy ships, subs, and shore sites with the ability to communicate using the Air Force's new AEHF satellite constellation, as well as the WGS, Milstar, and DSCS constellations. The total program cost is projected to be $2.1 billion (in FY 2011 dollars) for 304 terminals. The FY 2011 budget request provides $177 million for continued development and production.

WARFIGHTER INFORMATION NETWORK-TACTICAL (WIN-T): The FY 2011 budget request includes $621 million in funding for the Army's WIN-T program, $8 million of which is requested through the OCO budget. WIN-T is a communications and network suite that provides warfighters with satellite and terrestrial communication links. The WIN-T program is divided into four increments, with each increment providing progressively greater capabilities. The first increment is an upgrade to the Army's Joint Network Node (JNN) that allows the system to use the Air Force's WGS satellite constellation. Increment 2 adds a limited ability to communicate while on the move, Increment 3 provides a full comms-on-the-move capability and links to an airborne layer, and Increment 4 provides a jam-resistant satellite communications capability. In FY 2011, work continues on upgrading JNN terminals to WIN-T Increment 1; Increment 2 enters low rate initial production (LRIP); and development continues on Increment 3. The total cost of Increments 1, 2, and 3 is projected to be $24.9 billion (in FY 2011 dollars). Work has not yet begun on Increment 4.

MISSILES AND MUNITIONS

AIR-LAUNCHED CRUISE MISSILE (ALCM) MODERNIZATION: The ALCM is a subsonic, air-to-surface nuclear missile designed to be carried on the B-52. The modernization program, which has been funded at a low level for many years, is responsible for ensuring the missile and its interface with the W-80 nuclear warhead remain reliable and supportable through FY 2030. The FY 2011 budget requests $3.6 million for this program, which is similar to previous levels of funding. However, the budget justification notes that the funding will support an analysis of alternatives (AoA) for "future long range strategic stand-off vehicles." Moreover, the FYDP submitted with the budget shows a sharp increase in funding beginning in FY 2013, ramping up to $496 million in RDT&E funding in FY 2015. Taken together, this suggests that that the Department is planning to begin a development program for a replacement ALCM.

JOINT AIR-TO-SURFACE STANDOFF MISSILE (JASSM): JASSM is a long-range precision-guided cruise missile that is jointly developed by the Air Force and Navy. It has been successfully integrated with the B-1, B-2, B-52, and F-16 aircraft and there are plans to expand the JASSM's use to the F-15E, F/A-18, and F-35 fighters. The JASSM-ER is an extended-range version of the missile capable of striking targets at a distance of 500 nm, compared to 200 nm for the standard version. The FY 2011 budget request includes $236 million to procure 171 missiles. The total program cost is projected to be $7.6 billion (in FY 2011 dollars) to acquire over 5,000 missiles.

STANDARD FAMILY OF MISSILES (SM-2 AND SM-6): The SM-2 provides area defense against aircraft and anti-ship cruise missiles. The SM-6 is a follow-on to the SM-2 that uses the same airframe and similar internal components. The SM-6 will have an extended range and effectiveness against fixed and rotary wing aircraft, UAVs, and cruise missiles. The FY 2011 budget provides of total of $454 million for the program, including $96 million for continued R&D, $296 million for procurement of 67 missiles, and $62 million for modifications to existing missiles.

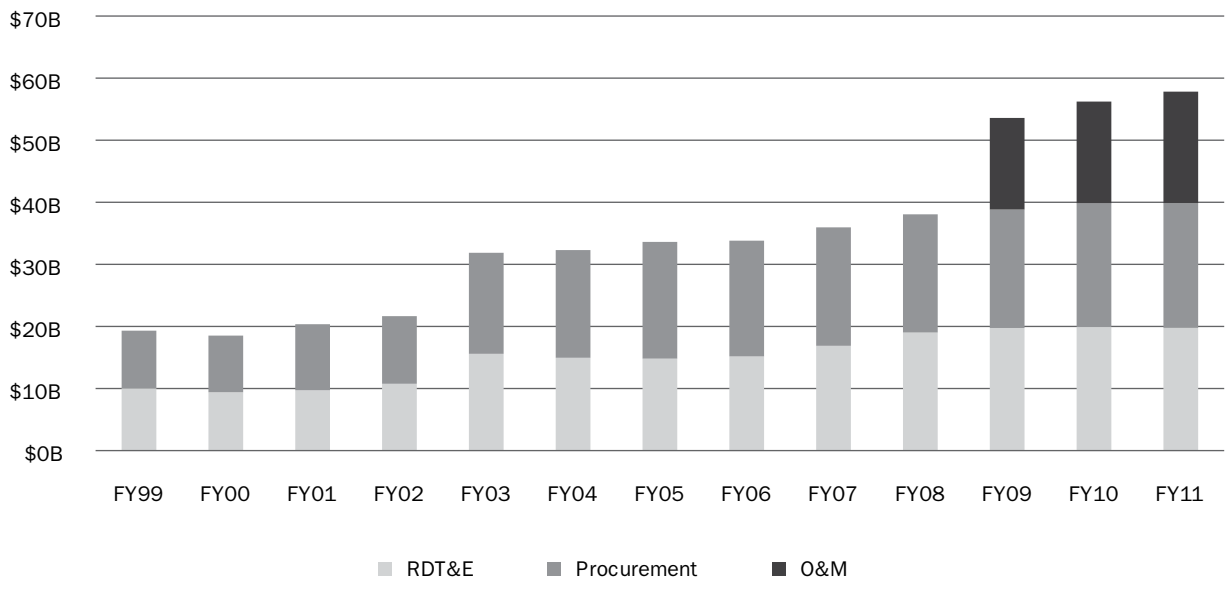
TRIDENT II BALLISTIC MISSILE: The Navy's Trident II, also known as the Trident D5, is a submarine-launched nuclear ballistic missile. First deployed in 1990, Trident II provides greater accuracy and payload capacity than the Trident I. The D5 Life Extension Program is intended to extend the service life of these missiles to FY 2040. The FY 2011 budget request provides $1.2 billion to support continued flight tests and procurement of missile motors and other critical components for the life extension program.

IV. FUNDING FOR CLASSIFIED OR "BLACK" PROGRAMS

Classified or "black" programs appear to account for about 19 percent of the acquisition funding and 7.3 percent of the O&M funding included in the FY 2011 base defense budget request. Classified programs and activities in the base budget total $16.9 billion in procurement funding, $19.4 billion in RDT&E funding, and $14.6 billion in O&M funding. The OCO budget request includes an additional $3.2 billion in procurement, $0.4 billion in RDT&E, and $3.4 billion in O&M classified funding.

Overall classified funding, including both base and war funding, totals some $57.8 billion in the FY 2011 request, a real increase of 2.8 percent from FY 2010. Classified RDT&E funding declines by 0.7 percent in real terms from FY 2010, which was the highest level observed, in real terms, since FY 1987. Classified procurement funding grew by 0.8 percent in real terms, rising to the highest level seen since FY 1987. The decline in RDT&E and rise in procurement funding for classified programs mirrors the shift in overall acquisition funding. Classified O&M funding has not been consistently reported in previous years, but the budget request reveals that it is the fastest-growing

FIGURE 18. CLASSIFIED FUNDING IN THE DOD BUDGET
(in FY 2011 dollars, includes war funding, classified O&M funding not reported in FY08 and earlier)



area of classified funding in FY 2011. Classified O&M increases 9.6 percent in real terms in the FY 2011 request, following a similar 11.0 percent real increase in FY 2010.

Classified funding contained in the DoD budget includes funding for the Military Intelligence Program (MIP) as well as the defense elements of the National Intelligence Program (NIP). MIP refers to the military's intelligence programs and activities intended for tactical military operations, while NIP includes intelligence programs and activities across the broader intelligence community.[45] The two categories of classified funding are mutually exclusive. In October 2009, the Director of National Intelligence Dennis Blair disclosed, as required by law, the total amount appropriated to NIP for FY 2009 was $49.8 billion,[46] up from $47.5 billion in FY 2008.[47] The total amount of MIP funding remains classified.

The record for classified acquisition programs has been mixed. A notable success was the Corona program for reconnaissance satellites, which produced valuable imagery intelligence from 1960 to 1972. Several successful and effective aircraft have also been developed and even produced as black programs, including the F-117 stealth fighter, the B-2 stealth bomber, and the SR-71 reconnaissance plane. On the other hand, some classified programs have had troubled histories. A recent example is the Future Imagery Architecture program to develop the next generation of spy satellites for the National Reconnaissance Office. The electro-optical satellite component of the program was cancelled in 2005 due to significant cost overruns and technical issues, resulting in what was reported as a $4 billion loss for the government.

Restrictions placed on access to classified programs have meant that DoD and Congress typically exercise less oversight over classified programs than unclassified ones. This lower level of scrutiny, coupled with the compartmentalization of information generally associated with classified efforts, has led some members of Congress to argue that the Pentagon's classification policies should be reformed. However, classified programs can, at times, field systems more quickly, and the potential existence of such programs increases uncertainty in the minds of potential adversaries. Such uncertainly complicates their planning and, potentially, compels them to divert resources to hedge against an unknown.[48]

As in the past, the Air Force's FY 2011 budget request contains the largest share of DoD's classified acquisition funding—nearly 80 percent of the total. Classified programs account for about 43 percent, or $19.1 billion, of the Air Force's procurement request and 46 percent, or $12.6 billion, of its RDT&E request. The concentration of classified funding in the Air Force's budget is the result of two factors. First, the Air Force

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45 DoD, *DoD Financial Management Regulation Volume 2B, Chapter 16* (Arlington, VA: DoD, July 2008).

46 ODNI News Release, *DNI Releases Budget Figure For 2009 National Intelligence Program* (Washington DC, October 30, 2009).

47 ODNI News Release, *DNI Releases Budget Figure For 2008 National Intelligence Program* (Washington DC, October 28, 2008).

48 Andrew F. Krepinevich, *Defense Investment Strategies in an Uncertain World* (Washington, DC: CSBA, August 2008), pp. 56–7.

acquisition budget is believed to contribute funds to a number of intelligence agencies, including the Central Intelligence Agency (CIA), National Security Agency (NSA), and National Reconnaissance Office (NRO).[49] Second, the Air Force is responsible for most command, control, communications, and intelligence (C3I) functions and related assets such as reconnaissance satellites and satellite launch and control facilities, which tend to be heavily classified programs.

Estimates of DoD's classified acquisition budget request are calculated from information found in DoD's Procurement Programs (P-1), Research, Development, Test and Evaluation (R-1), and Operation and Maintenance (O-1) books. It includes both named classified programs, that is programs or funding lines that are listed by name and are described as classified, as well as unnamed classified funding that is either labeled only as classified or is omitted from the budget justification documents but including in the total funding. A more detailed explanation and a list of specific programs and activities that were included in the classified funding totals can be found in the appendix.

[49] Stephen I Schwartz, et al., *Atomic Audit* (Washington DC: Brookings Institution Press, 1998), pp. 253–5.

V. CONCLUSION

Overall, the FY 2011 defense budget request continues the reforms and rebalancing initiated in the FY 2010 budget. It sustains a gradual shift in acquisition funding toward programs more closely associated with the ongoing wars in Iraq and Afghanistan, particularly rotary-wing aircraft and UAVs. There are few new cuts to acquisition programs proposed in the budget request, and the two largest cuts included, the C-17 and Joint Strike Fighter Alternate Engine, are both items that were proposed in previous years. The Department continues to face a growing wave of recapitalization requirements for aging equipment near the end of its service life, despite continued growth in acquisition funding.

The FY 2011 request also does little to control rising personnel costs for both DoD civilians and military personnel. Healthcare costs in particular continue to grow well above the rate of inflation. While some of this growth is due to general healthcare inflation in the overall economy, much of it is due to factors unique to DoD, such as the addition of new and expanded benefits and the growing disparity between the annual premium military retirees pay for TRICARE (which has not risen in 15 years) and the cost of comparable private sector coverage. The cost of DoD civilian personnel has not grown as significantly as that of military personnel over the past ten years, but the renewed emphasis on in-sourcing and the corresponding growth in the total number of DoD civilians adds to personnel costs for the Department.

Over the past decade, overall growth in the defense budget has allowed the Department to support growth in both personnel and equipment costs without having to choose between the two. However, as the fiscal situation of the federal government deteriorates due to rising debt and interest payments, sustained growth in the defense budget is unlikely. The central challenge for the defense budget in the coming years is to find the right balance between personnel-related costs, such as pay, pensions, and healthcare, and equipment-related costs, such as new weapon systems and on-going military operations. It can also be viewed as an intergenerational question—a choice between funding pay and benefits for today's military (and retirees) or funding the equipment and training needed for those who will fight tomorrow's wars. The fiscal reality is that in a flat or declining budgetary environment, the Department will not be able to fund both to the same extent that it does today.

While the prospect of a declining defense budget may seem like a daunting challenge, particularly while the nation is still engaged in two ongoing wars, it should also be viewed as an opportunity. It can provide both the fiscal and political imperative to jettison programs and activities that are no longer needed—so called "wasting

assets"[50]—and focus resources more efficiently on confronting the most likely future threats. Moreover, a period of constrained budgets can, if properly managed, result in a truly transformed military that fundamentally looks and operates differently—and more effectively—than today's force.

[50] See Andrew F. Krepinevich, "The Pentagon's Wasting Assets" (Washington DC: *Foreign Affairs*, July/August 2009). Accessed at http://www.foreignaffairs.com/articles/65150/andrew-f-krepinevich-jr/the-pentagons-wasting-assets.

VI. ACRONYM LIST

AAV	Amphibious Assault Vehicle
AEHF	Advanced Extremely High Frequency
ALCM	Air Launched Cruise Missile
AOA	Analysis of Alternatives
AMP	Avionics Modernization Program
BAMS	Broad Area Maritime Surveillance
BCT	Brigade Combat Team
BMD	Ballistic Missile Defense
BRAC	Base Realignment and Closure
C3I	Command, Control, Communications, and Intelligence
CAP	Combat Air Patrol
CENTCOM	Central Command
DAGR	Defense Advanced GPS Receivers
DODEA	Department of Defense Education Activity
DMSP	Defense Meteorological Space Program
DSCS	Defense Satellite Communications System
EADS	European Aeronautic Defense and Space
ECI	Employment Cost Index
EELV	Evolved Expendable Launch Vehicle
EHF	Extremely High Frequency
EFV	Expeditionary Fighting Vehicle
FAB-T	Family of Advanced Beyond Line-of Sight Terminals
FCS	Future Combat System
FMTV	Family of Medium Tactical Vehicles
FY	Fiscal Year
FYDP	Future Years Defense Program
GAO	Government Accountability Office
GDP	Gross Domestic Product
GEO	Geostationary Orbit
GMD	Ground Based Midcourse Defense
GMR	Ground Mobile Radio

GPS	Global Positioning System
GS	General Schedule
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HMO	Health Maintenance Organization
IBCT	Infantry Brigade Combat Team
IED	Improvised Explosive Device
IOC	Initial Operational Capability
ISR	Intelligence, Surveillance, and Reconnaissance
JASSM	Joint Air-to-Surface Standoff Missile
JCA	Joint Cargo Aircraft
JLENS	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System
JNN	Joint Network Node
JTRS	Joint Tactical Radio System
JLTV	Joint Light Tactical Vehicle
JHSV	Joint High Speed Vessel
JSF	Joint Strike Fighter
LCC-R	Landing Command and Control Ship Replacement
LCMR	Light Weight Counter-Mortar Radar
LCS	Littoral Combat Ship
LRIP	Low Rate Initial Production
LUH	Light Utility Helicopter
MEADS	Medium Extended Air Defense System
MILCON	Military Construction
MIP	Military Intelligence Program
MRAP	Mine Resistant Ambush Protected
MUOS	Mobile User Objective System
MYP	Multiyear Procurement
NECC	Net Enabled Command Capability
NGB	Next Generation Bomber
NGNN	Northrop Grumman's Newport News Shipbuilding
NIP	National Intelligence Program
NMT	Navy Multiband Terminal
NOAA	National Oceanic and Atmospheric Agency
NPOESS	National Polar-orbiting Operational Environmental Satellite System
NRO	National Reconnaissance Office
NSA	National Security Agency

NSPS	National Security Personnel System
O&M	Operations and Maintenance
O&S	Operations and Support
OCO	Overseas Contingency Operations
OMB	Office of Management and Budget
OPTEMPO	Operational Tempo
PAUC	Program Acquisition Unit Cost
PCS	Permanent Change of Station
PNVS	Pilot Night Vision Sensors
QDR	Quadrennial Defense Review
RDT&E	Research, Development, Test, and Evaluation
RERP	Reliability Enhancement and Re-engining Program
SAR	Selected Acquisitions Report
SATCOM	Satellite Communications
SBIRS	Space-Based Infrared System
SEP	System Enhancement Package
SOF	Special Operations Forces
TACLAN	Tactical Local Area Network
TADS	Target Acquisition Designation Sight
THAAD	Theater High Altitude Area Defense
TSAT	Transformational Satellite Communications System
UAS	Unmanned Aerial Systems
UAV	Unmanned Aerial Vehicle
UFO	UHF-Follow On
UHF	Ultra High Frequency
USMC	United States Marine Corps
WGS	Wideband Global SATCOM
WIN-T	Warfighter Information Network-Tactical

VII. APPENDIX

TABLE 3. NATIONAL DEFENSE (050) BUDGET AUTHORITY, FY 1946–FY 2015
(in billions of dollars)

	Current Dollars	FY 2011 Dollars*	% real change
FY 1946	44.0	419.7	
FY 1947	9.0	77.5	*(81.5%)*
FY 1948	9.5	75.0	*(3.2%)*
FY 1949	10.9	83.5	*11.5%*
FY 1950	16.5	127.8	*53.0%*
FY 1951	57.8	425.5	*232.8%*
FY 1952	67.5	477.9	*12.3%*
FY 1953	56.9	395.4	*(17.3%)*
FY 1954	38.7	265.9	*(32.8%)*
FY 1955	32.9	224.1	*(15.7%)*
FY 1956	35.0	232.4	*3.7%*
FY 1957	39.4	252.5	*8.6%*
FY 1958	40.0	248.8	*(1.5%)*
FY 1959	45.1	276.1	*11.0%*
FY 1960	44.3	268.2	*(2.9%)*
FY 1961	45.1	269.4	*0.5%*
FY 1962	50.2	296.1	*9.9%*
FY 1963	52.1	303.8	*2.6%*
FY 1964	51.6	297.3	*(2.2%)*
FY 1965	50.6	286.4	*(3.7%)*
FY 1966	64.4	357.3	*24.8%*
FY 1967	73.1	392.7	*9.9%*
FY 1968	77.8	403.8	*2.8%*
FY 1969	78.5	389.5	*(3.5%)*
FY 1970	75.3	354.7	*(8.9%)*
FY 1971	72.7	326.0	*(8.1%)*
FY 1972	76.4	327.1	*0.3%*
FY 1973	79.1	324.3	*(0.8%)*
FY 1974	81.5	311.8	*(3.9%)*
FY 1975	86.2	298.6	*(4.2%)*
FY 1976	97.3	314.6	*5.3%*
FY 1977	110.2	331.2	*5.3%*
FY 1978	117.2	330.2	*(0.3%)*
FY 1979	126.5	329.7	*(0.1%)*
FY 1980	143.9	344.6	*4.5%*
FY 1981	180.0	392.5	*13.9%*
FY 1982	216.5	441.9	*12.6%*
FY 1983	245.0	479.0	*8.4%*
FY 1984	265.2	499.9	*4.4%*
FY 1985	294.7	538.1	*7.6%*
FY 1986	289.1	516.1	*(4.1%)*
FY 1987	287.4	499.7	*(3.2%)*
FY 1988	292.0	491.9	*(1.6%)*
FY 1989	299.6	485.8	*(1.2%)*
FY 1990	303.3	474.3	*(2.4%)*
FY 1991	288.9	435.3	*(8.2%)*
FY 1992	295.1	433.3	*(0.5%)*
FY 1993	281.1	403.8	*(6.8%)*
FY 1994	263.3	370.5	*(8.3%)*
FY 1995	266.4	367.0	*(0.9%)*
FY 1996	266.2	359.8	*(2.0%)*
FY 1997	270.4	358.9	*(0.3%)*
FY 1998	271.0	355.3	*(1.0%)*
FY 1999	292.3	378.0	*6.4%*
FY 2000	304.0	385.7	*2.0%*
FY 2001	334.7	414.8	*7.6%*
FY 2002	362.0	441.4	*6.4%*
FY 2003	456.0	544.6	*23.4%*
FY 2004	490.6	571.2	*4.9%*
FY 2005	505.8	570.3	*(0.2%)*
FY 2006	556.3	606.5	*6.3%*
FY 2007	625.8	663.1	*9.3%*
FY 2008	696.2	720.9	*8.7%*
FY 2009	697.8	711.8	*(1.3%)*
FY 2010**	722.1	730.1	*2.6%*
FY 2011	738.7	738.7	*1.2%*
FY 2012	646.6	636.7	*(13.8%)*
FY 2013	662.3	641.2	*0.7%*
FY 2014	679.1	646.5	*0.8%*
FY 2015	698.2	653.4	*1.1%*

Source: CSBA, June 2010. Based on OMB and DoD data.

* Derived using GDP deflator.

** Includes the supplemental appropriations request for FY 2010 OCO funding

TABLE 4. NATIONAL DEFENSE (050) OUTLAYS, FY 1946–FY 2015
(in billions of dollars)

	Current Dollars	FY 2011 Dollars*	% real change
FY 1946	42.7	407.2	
FY 1947	12.8	110.8	(72.8%)
FY 1948	9.1	71.9	(35.1%)
FY 1949	13.2	100.5	39.7%
FY 1950	13.7	106.5	6.0%
FY 1951	23.6	173.6	63.0%
FY 1952	46.1	326.2	88.0%
FY 1953	52.8	367.1	12.5%
FY 1954	49.3	338.5	(7.8%)
FY 1955	42.7	291.3	(14.0%)
FY 1956	42.5	282.6	(3.0%)
FY 1957	45.4	291.1	3.0%
FY 1958	46.8	291.2	0.0%
FY 1959	49.0	300.4	3.2%
FY 1960	48.1	291.3	(3.0%)
FY 1961	49.6	296.1	1.6%
FY 1962	52.3	309.0	4.4%
FY 1963	53.4	311.3	0.7%
FY 1964	54.8	315.5	1.3%
FY 1965	50.6	286.5	(9.2%)
FY 1966	58.1	322.2	12.4%
FY 1967	71.4	383.7	19.1%
FY 1968	81.9	425.1	10.8%
FY 1969	82.5	409.3	(3.7%)
FY 1970	81.7	384.6	(6.0%)
FY 1971	78.9	353.6	(8.1%)
FY 1972	79.2	338.9	(4.2%)
FY 1973	76.7	314.5	(7.2%)
FY 1974	79.3	303.7	(3.4%)
FY 1975	86.5	299.7	(1.3%)
FY 1976	89.6	289.6	(3.4%)
FY 1977	97.2	292.4	1.0%
FY 1978	104.5	294.4	0.7%
FY 1979	116.3	303.3	3.0%
FY 1980	134.0	321.0	5.8%
FY 1981	157.5	343.5	7.0%
FY 1982	185.3	378.2	10.1%
FY 1983	209.9	410.3	8.5%
FY 1984	227.4	428.7	4.5%
FY 1985	252.7	461.5	7.6%
FY 1986	273.4	487.9	5.7%
FY 1987	282.0	490.3	0.5%
FY 1988	290.4	489.1	(0.2%)
FY 1989	303.6	492.2	0.6%
FY 1990	299.3	468.1	(4.9%)
FY 1991	273.3	411.8	(12.0%)
FY 1992	298.4	438.2	6.4%
FY 1993	291.1	418.2	(4.5%)
FY 1994	281.6	396.3	(5.2%)
FY 1995	272.1	374.9	(5.4%)
FY 1996	265.8	359.2	(4.2%)
FY 1997	270.5	359.1	(0.0%)
FY 1998	268.2	351.5	(2.1%)
FY 1999	274.8	355.5	1.1%
FY 2000	294.4	373.4	5.1%
FY 2001	304.8	377.7	1.1%
FY 2002	348.5	424.9	12.5%
FY 2003	404.8	483.4	13.8%
FY 2004	455.8	530.8	9.8%
FY 2005	495.3	558.5	5.2%
FY 2006	521.8	569.0	1.9%
FY 2007	551.3	584.1	2.7%
FY 2008	616.1	637.9	9.2%
FY 2009	661.0	674.3	5.7%
FY 2010**	719.2	727.1	7.8%
FY 2011	749.7	749.7	3.1%
FY 2012	681.7	671.2	(10.5%)
FY 2013	660.3	639.2	(4.8%)
FY 2014	669.6	637.3	(0.3%)
FY 2015	684.6	640.7	0.5%

Source: CSBA, June 2010. Based on OMB and DoD data.

* Derived using GDP deflator.

** Includes OCO funding requested in supplemental appropriations for FY 2010

TABLE 5. DEPARTMENT OF DEFENSE (051) BUDGET AUTHORITY BY TITLE
(in billions of dollars)

Current Dollars	FISCAL YEAR								
	1980 ~	1985 ~	1990 ~	1995 ~	2000	2001	2002	2003	2004
Military Personnel	41.1	67.8	78.9	71.6	73.8	76.9	87.0	109.1	116.1
O&M	46.4	77.8	88.4	93.7	108.7	125.2	133.2	178.3	189.8
Procurement	35.3	96.8	81.4	43.6	55.0	62.6	62.7	78.5	83.1
RDT&E	13.6	31.3	36.5	34.5	38.7	41.6	48.7	58.1	64.6
Military Construction	2.3	5.5	5.1	5.4	5.1	5.4	6.6	6.7	6.1
Family Housing	1.5	2.9	3.1	3.4	3.5	3.7	4.0	4.2	3.8
Other	0.5	4.7	-0.4	3.4	5.5	3.3	2.6	2.9	7.4
DoD	140.7	286.8	292.9	255.7	290.3	318.7	344.9	437.7	470.9

FY 2011 Dollars***	FISCAL YEAR								
	1980 ~	1985 ~	1990 ~	1995 ~	2000	2001	2002	2003	2004
O&M	111.1	142.1	138.2	129.1	137.9	155.1	162.4	213.0	221.0
Procurement	84.5	176.8	127.3	60.1	69.7	77.6	76.5	93.7	96.7
RDT&E	32.5	57.2	57.0	47.6	49.1	51.5	59.4	69.4	75.3
Military Construction	5.5	10.1	8.0	7.5	6.5	6.7	8.1	8.0	7.1
Family Housing	3.7	5.3	4.9	4.7	4.5	4.6	4.9	5.0	4.5
Other	1.3	8.5	-0.6	4.7	6.9	4.1	3.2	3.4	8.6
DoD	336.9	523.7	458.2	352.3	368.3	394.9	420.5	522.7	548.3

Source: CSBA, June 2010. Based on OMB and DoD data.

* Includes OCO funding requested in supplemental appropriations for FY 2010.

** Figures include allowances for future OCO funding that is not yet allocated across the titles.

*** Derived using GDP deflator.

FISCAL YEAR										
2005	**2006**	**2007**	**2008**	**2009**	**2010***	**2011**	**2012**	**2013**	**2014**	**2015**
121.3	128.5	131.8	139.0	149.3	156.4	159.2	147.3	151.3	155.6	159.8
179.2	213.5	240.2	256.2	271.6	297.3	317.7	212.8	221.9	231.6	240.3
96.6	105.4	133.8	165.0	135.4	134.5	137.5	120.3	124.1	132.7	137.4
68.8	72.9	77.5	79.6	80.0	80.6	76.8	75.9	72.8	70.0	69.3
7.3	9.5	14.0	22.1	26.8	22.9	18.2	13.6	14.9	11.7	12.7
4.1	4.4	4.0	2.9	3.9	2.3	1.8	1.6	1.6	1.5	1.6
6.6	2.3	1.7	9.9	0.6	2.9	1.1	49.0**	49.5**	49.1**	49.6**
483.9	536.5	603.0	674.7	667.5	696.9	712.3	620.5	636.1	652.2	670.6

FISCAL YEAR										
2005	**2006**	**2007**	**2008**	**2009**	**2010***	**2011**	**2012**	**2013**	**2014**	**2015**
202.1	232.8	254.5	265.3	277.0	300.6	317.7	209.5	214.8	220.4	224.9
108.9	114.9	141.7	170.8	138.2	136.0	137.5	118.4	120.1	126.4	128.6
77.6	79.4	82.2	82.4	81.6	81.5	76.8	74.7	70.5	66.6	64.8
8.2	10.4	14.8	22.8	27.4	23.2	18.2	13.3	14.4	11.2	11.9
4.6	4.8	4.2	3.0	3.9	2.3	1.8	1.6	1.5	1.5	1.5
7.4	2.5	1.8	10.3	0.6	2.9	1.1	48.2**	47.9**	46.7**	46.4**
545.6	584.9	638.8	698.6	680.9	704.6	712.3	610.9	615.7	620.8	627.6

TABLE 6. NATIONAL DEFENSE, FEDERAL SPENDING, AND THE GROSS DOMESTIC PRODUCT FY 1980–FY 2015 (outlays in billions of current dollars)

Fiscal Year	National Defense Outlays (050)	Federal Outlays	050 as % of Federal Outlays	GDP	050 as % of GDP
FY 1980	134.0	590.9	22.7%	2,724.2	4.9%
FY 1981	157.5	678.2	23.2%	3,057.0	5.2%
FY 1982	185.3	745.7	24.8%	3,223.7	5.7%
FY 1983	209.9	808.4	26.0%	3,440.7	6.1%
FY 1984	227.4	851.8	26.7%	3,844.4	5.9%
FY 1985	252.7	946.3	26.7%	4,146.3	6.1%
FY 1986	273.4	990.4	27.6%	4,403.9	6.2%
FY 1987	282.0	1,004.0	28.1%	4,651.4	6.1%
FY 1988	290.4	1,064.4	27.3%	5,008.5	5.8%
FY 1989	303.6	1,143.7	26.5%	5,399.5	5.6%
FY 1990	299.3	1,253.0	23.9%	5,734.5	5.2%
FY 1991	273.3	1,324.2	20.6%	5,930.5	4.6%
FY 1992	298.3	1,381.5	21.6%	6,242.0	4.8%
FY 1993	291.1	1,409.4	20.7%	6,587.3	4.4%
FY 1994	281.6	1,461.8	19.3%	6,976.6	4.0%
FY 1995	272.1	1,515.8	17.9%	7,341.1	3.7%
FY 1996	265.7	1,560.5	17.0%	7,718.3	3.4%
FY 1997	270.5	1,601.1	16.9%	8,211.7	3.3%
FY 1998	268.2	1,652.5	16.2%	8,663.0	3.1%
FY 1999	274.8	1,701.8	16.1%	9,208.4	3.0%
FY 2000	294.4	1,789.0	16.5%	9,821.0	3.0%
FY 2001	304.7	1,862.9	16.4%	10,225.3	3.0%
FY 2002	348.5	2,010.9	17.3%	10,543.9	3.3%
FY 2003	404.7	2,159.9	18.7%	10,979.8	3.7%
FY 2004	455.8	2,292.9	19.9%	11,685.6	3.9%
FY 2005	495.3	2,472.0	20.0%	12,445.7	4.0%
FY 2006	521.8	2,655.1	19.7%	13,224.9	3.9%
FY 2007	551.3	2,728.7	20.2%	13,896.0	4.0%
FY 2008	616.1	2,982.6	20.7%	14,439.0	4.3%
FY 2009	661.0	3,517.7	18.8%	14,237.2	4.6%
FY 2010*	719.2	3,720.7	19.3%	14,623.9	4.9%
FY 2011	749.7	3,833.9	19.6%	15,299.0	4.9%
FY 2012	681.7	3,754.9	18.2%	16,203.3	4.2%
FY 2013	660.3	3,915.4	16.9%	17,182.2	3.8%
FY 2014	669.6	4,161.2	16.1%	18,192.6	3.7%
FY 2015	684.6	4,385.5	15.6%	19,190.4	3.6%

Source: CSBA, June 2010. Based on OMB and DoD data.

* Includes OCO funding requested in supplemental appropriations for FY 2010.

TABLE 7. DEPARTMENT OF DEFENSE CLASSIFIED BUDGET FOR ACQUISITION PROGRAMS, FY 1987–FY 2011 (Total Obligational Authority in Billions of Current Year Dollars)

	CLASSIFIED R&D					CLASSIFIED PROCUREMENT				
	Army	Navy	Air Force	Defense-Wide	Total	Army	Navy	Air Force	Defense-Wide	Total
FY 1987	0.5	1.0	5.6	1.2	8.3	0.4	0.3	11.1	0.8	12.6
FY 1988	0.5	1.7	5.5	1.5	9.2	0.0	0.0	9.9	0.7	10.6
FY 1989	0.5	2.4	3.2	1.2	7.3	0.2	0.2	8.2	0.7	9.3
FY 1990	0.5	1.4	3.0	1.4	6.3	0.1	0.1	8.4	0.6	9.2
FY 1991	0.7	1.4	3.0	2.0	7.1	0.1	0.1	8.3	0.7	9.2
FY 1992	0.5	1.4	3.2	1.4	6.5	0.2	0.1	8.3	0.7	9.3
FY 1993	0.4	1.1	3.1	1.3	5.9	0.0	0.1	7.2	0.6	7.9
FY 1994	0.3	0.8	2.4	1.2	4.7	0.0	0.1	7.4	0.7	8.2
FY 1995	0.1	0.9	2.4	1.2	4.6	0.0	0.1	6.5	0.5	7.1
FY 1996	0.1	1.0	3.2	1.0	5.3	0.0	0.0	6.7	0.6	7.3
FY 1997	0.1	1.1	4.6	1.3	7.2	0.0	0.1	5.4	0.6	6.1
FY 1998	0.1	1.3	5.4	1.2	8.1	0.1	0.1	6.1	0.5	6.8
FY 1999	0.1	1.2	4.9	1.5	7.8	0.0	0.0	6.7	0.5	7.2
FY 2000	0.1	1.0	4.9	1.3	7.4	0.0	0.0	6.7	0.5	7.2
FY 2001	0.1	1.3	4.8	1.6	7.8	0.0	0.0	8.2	0.4	8.6
FY 2002	0.1	1.5	5.1	2.1	8.8	0.0	0.0	8.5	0.4	8.9
FY 2003	0.1	1.9	7.0	4.0	13.1	0.0	0.0	12.7	0.8	13.6
FY 2004	0.2	2.0	6.7	4.0	12.8	0.0	0.0	14.2	0.7	14.9
FY 2005	0.1	2.1	7.0	3.9	13.1	0.0	0.0	16.0	0.6	16.7
FY 2006	0.3	2.3	7.3	4.0	13.9	0.0	0.0	16.6	0.5	17.1
FY 2007	0.3	2.5	9.0	4.1	15.9	0.0	0.0	17.5	0.5	18.0
FY 2008	0.2	2.6	10.8	4.8	18.4	0.0	0.0	17.5	0.9	18.4
FY 2009	0.2	2.7	11.7	4.8	19.4	0.0	0.0	17.8	0.9	18.7
FY 2010	0.2	2.8	12.1	4.7	19.7	0.0	0.0	18.5	1.2	19.7
FY 2011*	0.2	2.8	12.6	4.2	19.8	0.0	0.0	19.1	1.0	20.1

* FY 2011 figures are requested funding levels and include both base and OCO funding.

Source: Center for Strategic and Budgetary Assessments based on DoD data, June 2010.

TABLE 8. CLASSIFIED PROCUREMENT FUNDING BY LINE ITEM
(Total Obligational Authority in Thousands of Current Year Dollars)

Service	Line Item Title	FY99	FY00	FY01	FY02
Air Force	CANCELLED ACCOUNT	-	-	-	-
Air Force	CANCELLED ACCOUNTS	10,226	7,956	-	14,992
Air Force	CLASSIFIED PROGRAMS	-	36,100	-	-
Air Force	CLASSIFIED PROJECTS	7,205	9,007	44,725	42,552
Air Force	DARP RC135	16,317	12,527	15,640	14,072
Air Force	DCGS-AF	95,843	99,292	87,907	88,517
Air Force	DEFENSE SPACE RECONN PROGRAM	-	-	-	-
Air Force	DEFENSE SPACE RECONNAISSANCE PROG.	-	7,827	8,902	6,797
Air Force	SELECTED ACTIVITIES	5,824,734	5,538,327	6,886,671	7,319,574
Air Force	SPECIAL PROGRAMS	525,717	661,815	845,960	729,398
Air Force	SPECIAL UPDATE PROGRAM	169,676	141,036	135,068	164,294
Air Force	SPECIAL UPDATE PROGRAMS	18,189	185,821	139,784	126,981
	Air Force Subtotal	6,667,907	6,699,708	8,164,657	8,507,177
Army	CLASSIFIED PROGRAMS	-	-	-	-
Defense-Wide	CLASSIFIED PROGRAMS	502,200	474,300	418,400	429,200
Navy	CLASSIFIED PROGRAMS	-	19,300	-	-
	Total	7,170,107	7,193,308	8,583,057	8,936,377

Source: Center for Strategic and Budgetary Assessments based on DoD data, June 2010.

FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
9,328	-	-	-	-	-	-	-	-
-	-	76	-	4,410	-	-	-	-
11,959,059	13,362,449	15,137,200	15,712,500	16,381,800	16,244,173	16,625,057	17,247,531	17,986,942
37,614	16,402	28,910	-	-	-	-	-	-
12,888	16,651	21,139	21,219	23,609	22,380	22,857	23,062	23,296
114,230	194,174	115,985	251,538	221,468	245,121	221,032	292,755	271,015
279,419	215,390	330,851	316,309	213,401	183,006	158,496	104,851	-
6,644	14,036	14,198	14,435	15,110	19,068	95,659	64,247	42,368
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
194,174	218,499	223,944	251,705	460,575	622,957	438,251	469,813	489,680
126,911	126,600	125,626	25,898	133,634	171,596	202,887	310,179	247,584
12,740,267	14,164,201	15,997,929	16,593,604	17,454,007	17,508,301	17,764,239	18,512,438	19,060,885
36,900	36,300	10,300	10,700	17,800	9,610	3,737	3,274	3,335
817,800	679,400	649,800	479,000	520,900	860,532	916,423	1,185,928	1,009,070
33,200	21,000	18,600	15,600	17,200	11,169	18,260	19,403	19,767
13,628,167	14,900,901	16,676,629	17,098,904	18,009,907	18,389,612	18,702,659	19,721,043	20,093,057

TABLE 9. CLASSIFIED R&D FUNDING BY PROGRAM ELEMENT
(Total Obligational Authority in Thousands of Current Year Dollars)

Service	Program Element Title	FY99	FY00	FY01	FY02	FY03
AIR FORCE	Advanced Program Evaluation	201,543	259,093	261,109	84,072	242,161
	Advanced Program Technology	79,001	84,763	92,474	104,705	100,048
	Advanced Strategic Programs	-	-	-	-	5,817
	Classified Programs	4,326,160	4,244,224	4,079,066	4,308,629	5,956,933
	Defense Recon. Support Activities (SPACE)	-	36,491	39,859	44,800	41,631
	Evaluation and Analysis Program	68,985	70,444	76,434	188,567	227,032
	Night Fist - USSTRATCOM	-	-	-	-	-
	Other Programs	-	-	-	-	-
	Selected Activities	2,975	3,058	18,000	58,631	-
	Special Evaluation Program	97,142	79,571	75,561	98,285	139,200
	Special Evaluation System	58,217	54,427	62,622	39,596	38,748
	Special Programs	-	-	-	-	90,587
	Technical Evaluation System	107,266	82,849	92,990	146,464	181,514
	Air Force Subtotal	4,941,289	4,914,920	4,798,115	5,073,749	7,023,671
ARMY	CLASSIFIED PROGRAMS	-	-	-	-	12,445
	Other Programs	-	-	-	-	-
	Programwide Activities	67,210	64,176	67,449	58,366	59,836
	Special Army Program	9,479	22,943	10,636	6,811	-
	TRACTOR CAGE	6,009	5,389	5,783	8,045	12,242
	TRACTOR CAGE (Dem/Val)	915	1,057	941	3,566	-
	TRACTOR CARD	3,780	3,634	3,689	11,081	8,495
	TRACTOR DIRT	40	-	-	-	-
	TRACTOR HIKE	10,391	12,125	12,391	12,027	16,943
	TRACTOR HIP	11,603	11,513	7,933	7,197	6,322
	TRACTOR RED	4,420	2,834	951	300	-
	TRACTOR ROSE	2,427	17,482	10,476	8,952	3,261
	TRACTOR RUT	-	-	-	-	-
	Army Subtotal	116,274	141,153	120,249	116,345	119,544

FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
281,607	408,231	269,037	584,563	-	-	-	-
260,198	243,801	287,311	302,972	-	-	-	-
6,048	8,313	-	-	-	-	-	-
5,407,141	5,866,605	6,216,935	7,242,411	-	11,687,464	12,088,035	12,606,154
97,948	-	-	-	-	-	-	-
-	2,501	5,992	2,518	-	-	-	-
-	4,786	4,803	4,963	6,774	5,136	5,328	5,359
-	-	-	-	10,792,066	-	-	-
142,975	-	-	-	-	-	-	-
191,015	195,663	286,451	557,253	-	-	-	-
-	-	-	-	-	-	-	-
361,767	306,646	266,984	299,029	-	-	-	-
-	-	-	-	-	-	-	-
6,748,699	7,036,546	7,337,513	8,993,709	10,798,840	11,692,600	12,093,363	12,611,513
19,737	9,867	146,385	175,348	-	3,825	3,867	4,447
-	-	-	-	4,218	-	-	-
80,336	59,484	52,036	70,598	72,413	72,659	77,419	73,685
-	-	-	-	-	-	-	-
22,868	26,341	30,251	34,041	35,092	28,337	28,291	33,180
-	-	-	-	-	-	-	-
9,060	8,640	6,514	7,013	16,007	15,818	19,930	14,870
-	-	-	-	-	-	-	-
7,570	7,720	8,446	9,217	12,249	14,157	11,270	8,015
5,683	6,403	7,540	8,261	4,284	17,659	14,250	14,624
-	-	-	-	-	-	-	-
4,096	4,527	4,750	5,018	6,306	11,216	14,493	12,309
8,665	3,179	-	-	-	-	-	-
158,015	126,161	255,922	309,496	150,569	163,671	169,520	161,130

TABLE 9. CLASSIFIED R&D FUNDING BY PROGRAM ELEMENT *continued*
(Total Obligational Authority in Thousands of Current Year Dollars)

Service	Program Element Title	FY99	FY00	FY01	FY02	FY03
DEFENSE-WIDE	BLACK LIGHT	4,985	4,961	4,940	5,000	14,547
	Classified DARPA Programs	48,797	55,206	96,716	118,284	261,851
	Classified Program	13,583	-	-	-	-
	Classified Program USD(P)	3,230	11,185	8,842	45,000	186,192
	Classified Programs	1,405,498	1,236,493	1,497,093	1,886,751	3,428,460
	Classified Programs - C3I	61,733	574	636	44,274	75,066
	Other Programs	-	-	-	-	-
	Regarding Trench	-	-	-	-	-
	RETRACT LARCH	-	-	-	-	-
	Special Technical Support	11,018	15,670	29,304	12,107	12,878
	Thermal Vicar	-	-	4,838	5,952	6,949
	Defense-Wide Subtotal	1,548,844	1,324,089	1,642,369	2,117,368	3,985,943
NAVY	CHALK CORAL	96,249	39,402	47,512	45,280	67,617
	CHALK EAGLE	116,268	89,512	58,379	35,438	29,815
	Classified Programs	511,896	527,754	805,506	957,362	1,230,299
	COBRA JUDY	-	-	-	-	50,510
	LINK EVERGREEN	-	7,812	9,646	27,101	47,820
	LINK PLUMERIA	22,024	47,924	45,604	63,048	80,453
	Other Programs	-	-	-	-	-
	PILOT FISH	115,863	96,019	103,604	96,871	71,613
	RETRACT ELM	22,791	21,233	16,925	21,313	24,390
	RETRACT JUNIPER	11,075	5,980	-	-	-
	RETRACT LARCH	-	7,568	11,670	49,002	29,644
	RETRACT MAPLE	113,896	118,066	124,604	159,363	244,120
	Retract Violet	65,701	-	-	-	-
	Special Processes	81,120	68,013	59,709	65,285	47,104
	Navy Subtotal	1,156,883	1,029,283	1,283,159	1,520,063	1,923,385
	Total	7,763,290	7,409,445	7,843,892	8,827,525	13,052,543

Source: Center for Strategic and Budgetary Assessments based on DoD data, June 2010.

FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
18,802	20,417	-	-	-	-	-	-
211,192	148,933	156,107	147,159	186,582	193,690	177,582	167,008
-	-	-	-	-	-	-	-
145,169	121,330	86,784	91,626	109,452	99,622	94,864	-
3,547,293	3,567,047	3,696,750	3,855,122	1,694	4,479,234	4,343,793	4,019,809
34,093	-	-	-	-	-	-	-
-	-	-	-	4,453,160	-	-	-
-	-	-	-	1,945	3,159	6,130	7,529
-	-	6,577	22,253	22,129	21,368	21,542	21,592
13,434	29,531	19,683	-	-	-	-	-
6,925	6,965	6,958	7,414	9,235	9,452	11,352	8,851
3,976,908	3,894,223	3,972,859	4,123,574	4,784,197	4,806,525	4,655,263	4,224,789
59,868	57,504	42,518	28,097	26,502	105,673	70,327	71,920
7,674	46,426	112,700	131,863	196,258	236,510	441,112	447,804
1,052,423	1,161,036	1,273,243	1,376,488	-	1,495,793	1,289,843	1,317,802
68,519	92,661	119,527	134,815	131,836	100,814	61,804	36,527
91,987	42,725	56,305	54,341	64,987	21,895	123,147	41,433
100,841	112,694	82,741	81,111	88,361	69,044	62,774	58,030
-	-	-	-	1,380,893	-	-	-
94,807	85,209	128,312	128,408	129,504	84,119	78,741	81,784
39,089	47,020	53,728	57,494	71,887	136,991	150,959	183,187
14,463	36,337	43,420	37,718	46,373	155,636	114,210	134,497
72,146	89,812	80,314	85,385	104,556	91,183	109,023	142,858
303,062	265,507	309,742	342,183	349,905	142,877	209,139	219,463
-	-	-	-	-	-	-	-
51,469	41,810	46,487	46,575	42,779	59,413	53,810	36,457
1,956,348	2,078,741	2,349,037	2,504,478	2,633,841	2,699,948	2,764,889	2,771,762
12,839,970	13,135,671	13,915,331	15,931,257	18,367,447	19,362,744	19,683,035	19,769,194

Center for

Strategic and

Budgetary

Assessments

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