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LOOKING AHEAD TO THE FY 2011 DEFENSE BUDGET:

A Review of the Past Decade and Implications for the Future Year Defense Program

By Todd Harrison

Executive Summary

Next week the Obama Administration will release the 2010 Quadrennial Defense Review (QDR) and FY 2011 defense budget request. This comes as DoD strives to balance the demands of the ongoing wars in Iraq and Afghanistan with the need to reset the force and prepare for future adversaries, all while the nation emerges from the most severe economic downturn since the Great Depression. The federal government's record budget deficits will likely exert downward pressure on government spending, including defense spending, for years to come. This is a dramatic shift from the high rate of growth the base defense budget experienced over the past decade, which allowed the Department of Defense to postpone making many difficult decisions—a luxury that is not likely to be afforded in the coming years. This backgrounder places the defense budget within the context of the United States' overall fiscal outlook, reviews how defense dollars have been allocated over the past decade, and highlights budgetary and programmatic issues that will complicate DoD's planning over the Future Year Defense Program.

Today over 60 percent of the base defense budget is used for operations and support (O&S) activities, such as recruiting and training for the active duty military, guard, and reserve, supporting the DoD civilian workforce, and funding the peacetime operations and maintenance of equipment. Over the past ten years, O&S funding in the base budget grew at an annual rate of 3.5 percent above the rate of inflation, despite the fact that the number of active duty military and DoD civilian personnel remained relatively constant over this period.

DoD acquisitions consume about 35 percent of the base defense budget today and grew at a real annual rate of 4.6 percent between FY 2000 and FY 2010. Within acquisition, research and development funding grew slightly faster at a real annual rate of 4.9 percent over the decade, compared to 4.4 percent for procurement, reflecting a continuation of the

trend toward spending more on developing new weapon systems and less on procuring them in quantity. Within R&D, funding has shifted toward later development activities, such as system development and demonstration, and away from early research activities, such as applied research. R&D funding has also benefited from an average of 5 percent increases in budget authority granted by Congress each year above what DoD requested.

Aircraft procurements consume the largest share of overall procurement funding, at 34 percent for FY 2010. Further increases are expected over the FYDP as the Joint Strike Fighter (JSF) begins production; however, these increases may be tempered in the short-term if production of the JSF is slowed to address cost overruns in its development.

Shipbuilding and conversion funding grew at a real annual rate of 4.6 percent over the past ten years to nearly \$14 billion in the FY 2010 budget, which is far less than the estimated \$21 billion in annual funding needed to achieving the 313 ship fleet in the Navy's long-term shipbuilding plan. To achieve a fleet of this size within the fiscal realities of the future, the Navy will need to buy a larger number of lower cost ships, such as the Littoral Combat Ship (LCS), and fewer multi-billion dollar platforms. Ground systems procurement funding also enjoyed substantial increases over the decade, growing at a real annual rate of 5.1 percent. In the wake of the Future Combat Systems' termination, it may be difficult for the Army to maintain a funding wedge for a follow-on program in future years, especially if war-related reset costs migrate into the base budget without a corresponding increase in funding.

Of the \$4.8 trillion in total discretionary budget authority the Department of Defense received from FY 2000 to FY 2009, 21 percent (\$1.02 trillion) was appropriated for the wars in Iraq and Afghanistan.

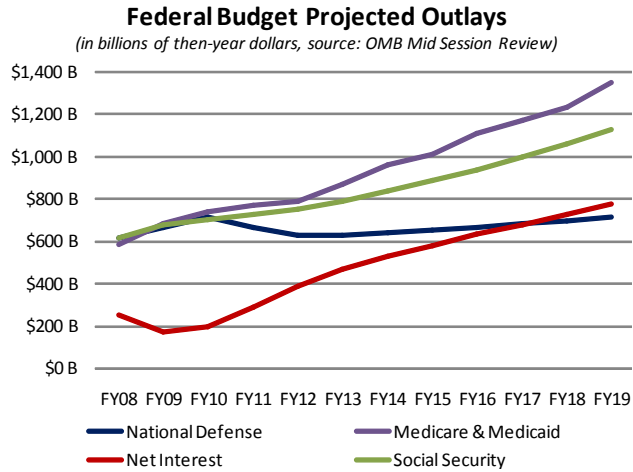
The decade's fastest growing area of procurement has been space systems, which more than quadrupled from \$1.0 billion to \$4.6 billion (in FY 2010 dollars), due in part to cost overruns. Six of the seven largest unclassified DoD space programs have cost overruns that total \$35 billion, resulting in both program schedules and costs being pushed further out into the future. Missile defense spending also grew over the decade, but several programs were cancelled in 2009 resulting in a 14 percent decline in R&D and procurement funding for FY 2010. The newly announced European missile defense system, which would use sea-based missiles initially, could cost as much as \$19 billion if new ships are procured for this mission or as little as \$300 million if existing ships are converted.

Family housing, military construction, and other funding in the base defense budget grew at a real annual rate of 5.9 percent over the past decade to \$26 billion in FY 2010. Much of this growth was due to the base realignment and closure process, which peaked at \$9 billion in funding in FY 2009. Base Realignment and Closure (BRAC)-related funding declined in FY 2010, and FY 2011 is expected to be the final year of funding. The budget for family housing also declined in FY 2010, but much of the apparant drop may be due to the stimulus bill shifting projects that would have been funded in FY 2010 to FY 2009.

Of the \$4.8 trillion in total discretionary budget authority the Department of Defense received from FY 2000 to FY 2009, 21 percent (\$1.02 trillion) was appropriated for the wars in Iraq and Afghanistan. Over the past six years, spending in Afghanistan has averaged \$1.1 million per troop per year. Direct spending on the troops, which includes only the

additional pay, benefits, and healthcare service members receive from being deployed, accounts for about \$66,000 of the cost per troop.

One of the main issues that demands attention in the upcoming defense budget is resolving the disconnect between the plans and programs DoD has put forward over the past decade and the resources available to support these programs in the long run. In some respects, this is a trade between funding continued increases in benefits and pay for military personnel—much of which accrues to retirees—and funding the weapon systems troops need for the conflicts they are in today and must be prepared for in the future. If personnel-related costs in the base budget continue growing at the same rate as over the past ten years—and there are many reasons to believe this may be the case—and the top-line budget remains flat or grows only slightly above inflation, there will be less funding available for acquisitions and DoD will be forced to rethink many of its long-term procurements.



The FY 2011 Defense Budget in Context

The 2010 QDR and the FY 2011 budget request, along with several other major reviews due this year, are expected to set a new direction for the Defense Department. While there have been some hints over the previous twelve months of what this new direction will be, much uncertainty remains. However, the budgetary challenges are clear: rising personnel costs, a growing list of military equipment in need of replacement or upgrade, two ongoing wars, and the need to prepare for future adversaries.

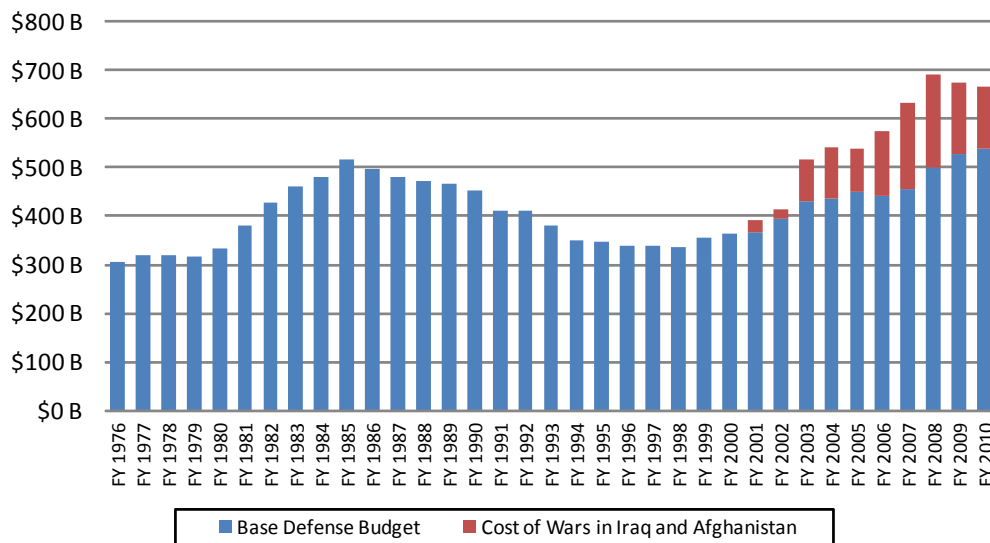
Further complicating matters, the nation’s economy is only beginning to emerge from the greatest downturn since the Great Depression. While the full impact of the recession remains to be seen, the impact on the federal budget is clear. The deficit rose to a record \$1.4 trillion in FY 2009 due to a combination of increased spending from the American Recovery and Reinvestment Act (ARRA) and the Troubled Asset Relief Program (TARP) and a reduction in revenues to the lowest level, as a percent of GDP, seen in over 50 years.¹ According to the Office of Management and Budget’s (OMB) Mid-Session Review, one of the fastest growing areas of the budget is net interest payments on the national debt, which are projected to grow at a real rate of 13 percent annually over the next ten years, far in excess of the country’s projected economic growth rate. Interest payments, which total \$196 billion in FY 2010, will rise to over \$700 billion annually by FY 2018, exceeding total outlays on national defense for the first time in modern history.²

¹ CBO, “Monthly Budget Review,” October 7, 2009. Accessed at <http://cbo.gov/doc.cfm?index=10640>
² OMB, “Mid-Session Review,” August 25, 2009. Accessed at <http://www.whitehouse.gov/omb/budget/MSR/>

At the same time, defense spending has risen to a historically high level, in real dollars. The FY 2010 budget requested \$534 billion in discretionary and \$4 billion in mandatory funding for the base defense budget and an additional \$130 billion for the wars in Iraq and Afghanistan. This exceeds the previous peak in total defense spending of \$517 billion in FY 1986, adjusting for inflation. However, defense spending as a percent of GDP is not at a historically high level because over the past several decades the overall economy has grown faster than defense spending. This suggests that the current level of defense spending, while high, remains affordable by historical standards. But given the state of the federal budget and the ongoing cost of the wars, it is unlikely the base defense budget will be able to maintain the rate of growth experienced over the past ten years.³

The purpose of this report is to provide background and context for the upcoming FY 2011 budget request and to highlight key budget issues. It takes an account-by-account look across the defense budget identifying trends and highlighting budgetary and programmatic issues that will complicate DoD's planning over the Future Year Defense Program (FYDP). Three budget scenarios for the base defense budget are used throughout the analysis as a basis of comparison: zero real growth, two percent real growth, and growth at the 10-year real annual rate.⁴ The zero real growth scenario reflects the Office of Management

DoD Budget Authority
(in billions of FY 2010 dollars)



3 Notes on budget data and sources: 1) Unless otherwise noted, data from past years are shown in FY 2010 dollars and future years are shown in then-year dollars. 2) Data shown for FY 2010 reflects the president's budget request for FY 2010 and may differ from what was ultimately appropriated by Congress. 3) RDT&E and procurement data are Total Obligational Authority (TOA) from DoD budget documentation. All other budget data is discretionary budget authority (BA) from OMB budget documentation. TOA differs slightly from BA in some instances, and is used here because it is available in a less aggregated form, which was needed for some of the analysis. For a more complete explanation of the differences between TOA and BA, see DoD's Green Book pages 1-2 http://comptroller.defense.gov/defbudget/fy2010/Green_Book_Final.pdf.

4 The term "real annual rate" is used throughout this report to mean the compound annual growth rate (CAGR). All inflation adjustments use the GDP deflator provided in the OMB FY 2010 Budget Request Historical Tables.

Table 1: Scenarios for the DoD Base Budget

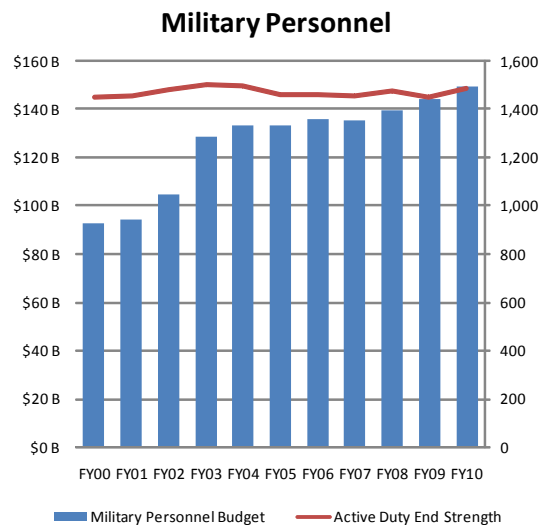
Account	FY10 Request	10-year CAGR	Scenarios for FY11 Budget			Cumulative Increase Over FYDP	
			No Real Growth	2% Real Growth	Growth at 10-year CAGR	2% Real Growth	Growth at 10-year CAGR
Operations and Support	\$322 B	3.5%	\$326 B	\$333 B	\$338 B	\$105 B	\$187 B
Acquisitions	\$186 B	4.6%	\$189 B	\$192 B	\$197 B	\$61 B	\$146 B
Housing, Construction, and Other	\$26 B	5.9%	\$26 B	\$27 B	\$28 B	\$9 B	\$27 B
<i>Total DoD Base Budget</i>	<i>\$534 B</i>	<i>4.0%</i>	<i>\$541 B</i>	<i>\$552 B</i>	<i>\$563 B</i>	<i>\$175 B</i>	<i>\$357 B*</i>

* Total does not reflect the sum of the above values due to the non-linearity of the compound annual growth calculation

and Budget’s (OMB) previous projection in the FY 2010 budget request of essentially zero real growth over the FYDP. The two percent real growth scenario represents the level of growth DoD reportedly requested from OMB this past fall.⁵ The 10-year real annual growth scenario serves as a reference for the growth in funding if each account followed the same trajectory as it did over the past decade, not including war funding. This report does not make projections of future funding levels but rather provides a quantitative analysis, using the three scenarios described, to identify potential budgetary or programmatic issues that may arise over the FYDP. A summary of the fiscal implications of each of the scenarios is shown in the table above.

Operations and Support

Operations and support funding encompasses both the operational and human components of the defense budget—that is, the costs of recruiting, training, and caring for the active duty military, guard and reserve, supporting most of the DoD civilian workforce, and operating and maintaining equipment. It includes both the military personnel and the operations and maintenance budgets, which together total \$322 billion (or 60 percent) of the FY 2010 base defense budget request. Over the past decade, both the military personnel and the operations and maintenance budgets have increased



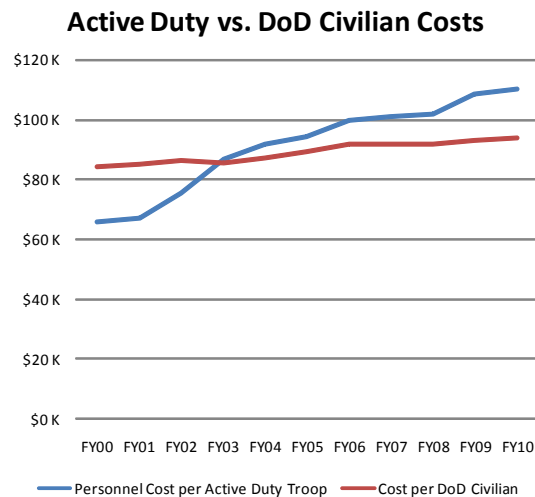
⁵ Inside Defense, “DoD OFFICIAL: FY-11 BUDGET TOPLINE LIKELY TO GET BOOST FROM OMB,” October 29, 2009.

substantially, despite the fact that the number of active duty personnel and DoD civilian employees has remained relatively constant.

Military personnel costs increased sharply in FY 2003 due to 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 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.”⁶ Accrual payments for this fund added \$10.8 billion in FY 2010 to the military personnel budget.

Military personnel costs have also increased due to a number of additional military benefits that were enhanced. 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. Beginning in FY 2004, Congress required that basic military pay be indexed to the Employment Cost Index (ECI) rather than the General Schedule (GS) pay scale.⁷ Each year since then it has approved pay increases of 0.5 percent above the ECI.⁸ These pay increases have both a compounding and cumulative effect on the Military Personnel budget because a raise in one year increases payroll costs in all future years and the raises build on each other year after year. Moreover, it increases service members’ retirement pay in the long run, thus requiring higher accrual payments to military retirement accounts for future retirees.

Military healthcare costs have also grown at a pace significantly above the rate of inflation. The Defense Health Program, funded through the O&M portion of the budget, increased at a real annual rate of 6.3 percent from FY 2000 to FY 2010. Total military healthcare costs exceed \$47 billion for FY 2010—nearly one tenth of the total DoD base budget. DoD has attributed this growth to new and expanded benefits, general healthcare cost inflation, and the increase



6 Michael Schoenbaum et. al., *Health Benefits for Medicare-Eligible Military Retirees: Rationalizing TRICARE for Life*, RAND Corporation, 2004, p. 1.

7 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 GS pay scale is used to determine the compensation of most federal civilian employees.

8 CBO, *Long-Term Implications of the Department of Defense’s Fiscal Year 2010 Budget Submission*, November 18, 2009, pp. 7-8.

in usage of healthcare benefits by eligible beneficiaries. It projects that healthcare costs will continue to increase at a rate of 5 to 7 percent annually through FY 2015.⁹

As a result of the increases in military pay and benefits over the past decade, the total cost per active duty troop (including mandatory and discretionary spending) has risen at an annual rate of 5.3 percent above the rate of inflation.¹⁰ Much of this growth is due to increases in non-cash and deferred compensation, such as healthcare, retirement pensions, and other benefits, which now make up 52 percent of total military compensation.¹¹ In comparison, this far exceeds the private industry average of 29 percent, according to the Bureau of Labor Statistics.¹² DoD civilian employees, most of whom are paid from the O&M budget, received similar pay increases as their military counterparts. However, total compensation for DoD civilians has not grown at the same rate as members of the active duty military because DoD civilians have not received comparable increases in benefits.

O&M funding more than doubled in real terms over the past decade. A substantial portion of this was due to the wars in Iraq and Afghanistan and healthcare-related costs. In the FY 2010 budget request, nearly one-third of the O&M budget came from Overseas Contingency Operations (OCO). Excluding the cost of the wars and the Defense Health Program, O&M funding grew at a real annual rate of just 2.7 percent from FY 2000 to FY 2010, which is one of the lowest growth rates in any area of the defense budget.

Military healthcare costs alone could require significant growth in O&S funding over the FYDP.

Growth in O&S funding would vary significantly under the three scenarios analyzed. Under the zero real growth scenario, O&S funding would increase from its current level of \$322 billion in FY 2010 to \$326 billion in FY 2011 to keep up with inflation. Under the two percent real growth scenario, O&S funding would increase to \$333 billion in FY 2011. Under the 10-year real annual growth scenario, which assumes O&S funding would continue growing at the 3.5 percent real annual rate experienced over the past ten years, the O&S budget would reach \$338 billion in FY 2011. Over the FYDP, the 2 percent real growth and 3.5 percent real growth scenarios would require an additional \$105 billion and \$187 billion, respectively, compared to the zero real growth scenario.¹³

Several factors at work in the DoD budget may make increases of this scale unavoidable in the coming years, particularly in the areas of pay and benefits. Military healthcare costs alone could require significant growth in O&S funding over the FYDP. If healthcare costs continue to grow at the 5 to 7 percent rate projected by DoD, military healthcare would consume an additional \$40 to \$58 billion over the FYDP. Pay for military personnel and DoD civilians is also expected to grow over the coming years due to the statutory requirement that military pay increases be indexed to the ECI, which has grown faster than

9 DoD, "DoD FY 2010 Budget Request Summary Justification," May 2009, pp. 1-7.

10 The cost per active duty troop is calculated by summing all funding lines under Military Personnel except those specifically for the guard and reserve components, plus funding for the Defense Health Program that resides in the O&M budget, divided by the active duty end strength for the same year.

11 DoD, *Tenth Quadrennial Review of Military Compensation*, February 2008, p. 18. Accessed at http://prhome.defense.gov/docs/Tenth_QRMC_Feb2008_Vol%20I.pdf

12 Bureau of Labor Statistics, *Employer Costs for Employee Compensation News Release*, December 9, 2009. Accessed at <http://www.bls.gov/news.release/ceec.nro.htm>

13 Costs projected over the FYDP are shown in then-year dollars.

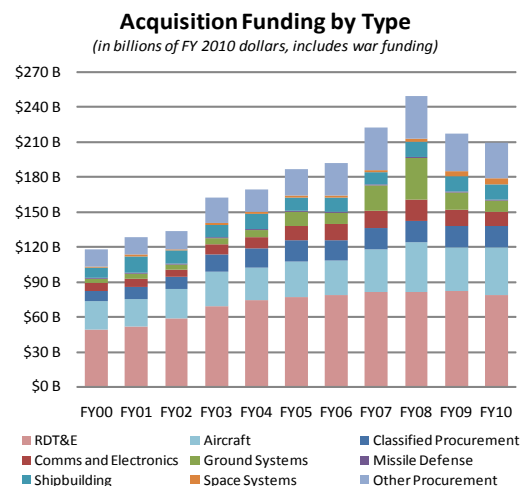
inflation in most years.¹⁴ In addition, DoD civilian pay increases have equaled or exceeded military pay increases for 20 of the past 28 years.¹⁵ Pay increases for both military and civilian personnel indexed to the ECI could add \$14 billion over the FYDP above the zero real growth scenario, and an additional \$5 billion if annual pay increases for military and civilian personnel follow recent trends and increase by an additional 0.5 percent above the ECI.

Another factor contributing to cost growth in O&S is that the number of troops and DoD civilian employees is projected to increase. In August 2009, the administration requested a budget amendment to allow for a temporary increase in Army end strength of 22,000 soldiers, and with the surge in Afghanistan an additional increase may be needed. The CBO estimates that the cost of a temporary increase in the Army of 30,000 soldiers would cost a total of \$8.4 billion from FY 2011 to FY 2013.¹⁶ The initial costs of the temporary increase of 22,000 soldiers was paid for out of war funding in FY 2010, but the administration did not announce plans for how these additional costs would be funded in future years. In addition, Secretary Gates previously signaled his intent to increase the DoD acquisition workforce by 20,000 civilian employees.¹⁷ At the current average cost per DoD civilian, this increase would cost about \$2 billion over the FYDP.¹⁸

These increases, which have already been put in place or announced, would total \$69 to \$70 billion over the FYDP—equivalent to 1.3 to 1.7 percent real annual growth in the base O&S budget.

Acquisitions

The next largest portion of the defense budget is devoted to acquisitions, which includes procurement and research, development, testing, and evaluation (RDT&E). From FY 2000 to FY 2010, acquisition funding in the base budget grew at a real annual rate of 4.6 percent, or 5.9 percent if war funding is included. Under the zero real growth scenario, acquisition



14 The CBO projects that the ECI will average 1.4 percent above the GDP deflator through 2026. CBO, *The 2009 Future Years Defense Program: Implications and Alternatives*, February 4, 2009, p. 4. Accessed at http://www.cbo.gov/ftpdocs/99xx/doc9972/02-04-Long-Term_Defense_Testimony.pdf

15 CBO, *Long-Term Implications of the Department of Defense's Fiscal Year 2010 Budget Submission*, November 18, 2009, p. 6. Accessed at http://www.cbo.gov/ftpdocs/107xx/doc10730/11-18-FY2010_DoD_Budget.pdf

16 CBO, *Cost Estimate: S. 1390 National Defense Authorization Act for Fiscal Year 2010*, July 14, 2009, p. 8. Accessed at <http://www.cbo.gov/ftpdocs/104xx/doc10459/s1390.pdf>

17 Robert Gates, "Defense Budget Recommendation Statement," April 6, 2009. Accessed at <http://www.defense.gov/speeches/speech.aspx?speechid=1341>

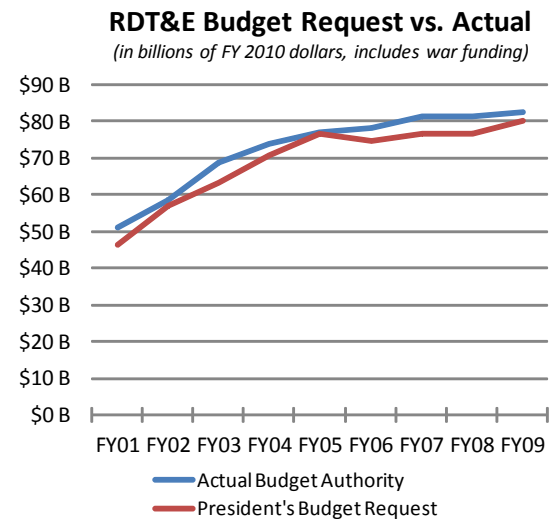
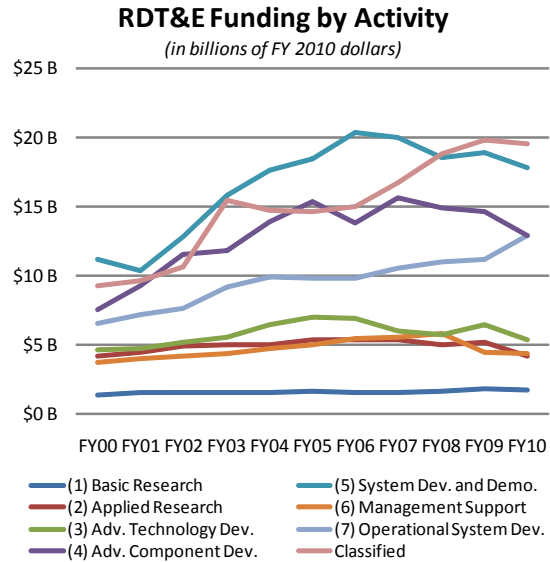
18 Secretary Gates also announced a separate initiative to hire 30,000 new DoD civilians to replace service support contractors. The reduction in contractor support costs would offset the cost of these new hires, to some extent. For the purposes of this analysis, any savings (or increases in costs) incurred as a result of converting these contractor positions to DoD civilians is not included.

funding in the base budget would have to grow from \$186 billion in the FY 2010 request to \$189 billion in FY 2011 to keep up with inflation.¹⁹ The two percent real growth scenario would boost the base acquisition budget to \$192 billion in FY 2011. Maintaining the ten-year real annual growth rate of 4.6 percent would push acquisitions to \$197 billion in FY 2011. Over the FYDP, the two percent real annual growth and 4.6 percent real annual growth scenarios would require an additional \$61 billion and \$146 billion, respectively, compared to the zero real growth scenario.²⁰

A. RDT&E

RDT&E funding grew at a real annual rate of 4.9 percent over the past ten years to its current level of \$79 billion in the FY 2010 budget request. War funding has not contributed significantly to the RDT&E budget, with just \$310 million coming from war funding in FY 2010.

Research and development spending is divided into eight broad activities. The fastest growing area of RDT&E funding since FY 2000 has been classified programs, which more than doubled in real terms over the ten-year period. The share of funding devoted to early research activities, such as basic research, applied research, and advanced technology demonstration, has gradually declined over the past decade. In FY 2000, 21 percent of the RTD&E budget was allocated to these early research activities, but by FY 2010 it fell to 15 percent. Later developmental activities, such as advanced component development, system development and demonstration, and operational system development gradually increased their share of the RDT&E budget from 52 to 55 percent over the same period. This trend reflects a gradual shift in priority from research activities that support the creation of new technologies toward developmental activities that adapt and



¹⁹ Congress appropriated a total of \$184.9 billion for acquisitions in FY 2010, compared to the \$186.1 billion requested.

²⁰ Costs projected over the FYDP are shown in then-year dollars.

integrate existing technologies for new weapon systems. This R&D strategy is consistent with Secretary Gates' stated intent to focus on delivering "good enough" solutions that are on time and at a reasonable cost rather than striving for new and "exquisite" capabilities that are more expensive, require longer development times, and may only be affordable in small numbers. If this trend continues over the long run, however, it could result in a gradual erosion of the United States' technological superiority relative to other militaries.

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 2009, RDT&E funding increased an average of 5.0 percent each year over what was requested. This increase is due to a variety of factors, including congressional additions during the appropriations process. The categories of management support and advanced technology demonstration garnered the greatest increases, averaging over \$1 billion each in annual increases. Two specific program elements that consistently enjoyed some of the highest net increases in funding from Congress were the Army's Medical Advanced Technology and Medical Technology programs, both of which fund research into new medical technologies for US forces. These programs received increases each year that averaged \$216 million and \$103 million, respectively, above DoD's request.

A major source of growth within RDT&E programs is cost overruns. While there are abundant examples of programs which exceeded their RDT&E cost estimates over the past decade, one of the most important programs to watch in the FY 2011 budget is the Joint Strike Fighter (JSF). By far the largest RDT&E program and the largest DoD acquisition overall, the JSF received a total of \$3.6 billion in RDT&E funding in the FY 2010 request. The JSF program's baseline plan called for a reduction in RDT&E funding over the FYDP as the aircraft entered production, ramping down to \$160 million in FY 2015. The Joint Estimate Team (JET), formed to conduct an independent cost and schedule assessment, released a report in September 2008 that estimated RDT&E costs would rise by a cumulative total of \$5 billion from FY 2011 to FY 2015.²¹ The JSF Joint Program Office and the prime

Table 2: Top RDT&E Programs

Program	Department	FY 2010 Request (in 000s)
Joint Strike Fighter	Air Force	\$1,858,055
Joint Strike Fighter	Navy	\$1,741,296
Aegis BMD	Defense-Wide	\$1,690,758
Multi-mission Maritime Aircraft (MMA)	Navy	\$1,162,417
FCS System of Systems Eng. & Program Mgmt	Army	\$1,067,191
BMD Miscourse Defense Segment	Defense-Wide	\$982,922
BMD Test & Targets	Defense-Wide	\$966,752
Joint Tactical Radio System (JTRS)	Navy	\$876,374
GPS III Space Segment	Air Force	\$815,095
FCS Sustainment & Training R&D	Army	\$749,182

²¹ Source: Briefing entitled "F-35 Joint Estimate Team: Estimate of FY10-15 Resource Requirements," September 8, 2008.

contractor, Lockheed Martin, have disputed the JET assessment, and since then additional reviews have been conducted by a second JET. However, if the JET’s higher estimate is used for the FY 2011 budget, it could mean an increase of nearly \$1.2 billion in RDT&E funding for the JSF in FY 2011. That could cause the total RDT&E budget to rise by 1.5 percent in real terms from this one program alone, if no offsetting cuts were made to other programs.

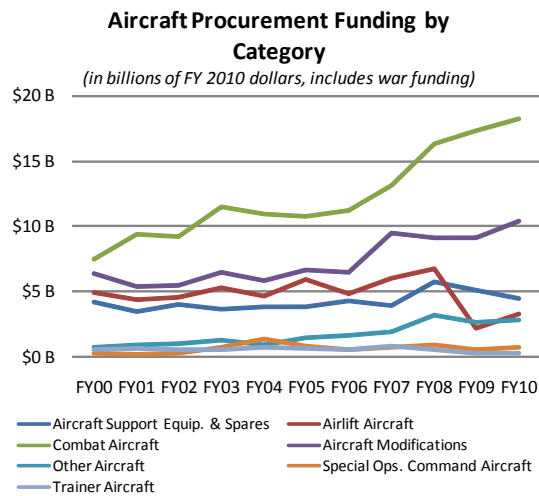
B. Aircraft

Funding for the procurement of aircraft in the base budget grew at a real annual rate of 4.1 percent over the past ten years to a level of more than \$36.8 billion in the FY 2010 request, or 5.0 percent and \$40.1 billion if war funding is included. In FY 2010, about half of all aircraft procurement dollars were planned for combat aircraft, such as fighters, bombers, and attack helicopters. The fastest growing category of aircraft over the past decade has been Other Aircraft, which includes UAVs and some Airborne Intelligence Surveillance and Reconnaissance (AISR)

platforms. While this category grew by 260 percent from FY 2000 to FY 2010, it consumes less than 7 percent of total aircraft procurement funding (including war funding).

The largest aircraft procurement in FY 2010 is the Joint Strike Fighter, budgeted at \$6.6 billion for 30 aircraft. The JSF budget will increase significantly in the coming years as production ramps up to the maximum rate of about 130 aircraft per year, not including aircraft procured for international partners. As previously discussed, the Joint Estimate Team formed to provide an independent assessment of the program’s cost and schedule determined that the program would require additional time and money. According to the JET’s September 2008 cost estimate, the JSF program would need an additional \$10.8 billion in procurement funding over the FYDP, compared to the program’s baseline plan, in addition to the \$5 billion needed for RDT&E. By this estimate, procurement funding for the JSF in FY 2015 would reach \$19.3 billion compared to the program’s plan of \$16.7 billion. However, procurement of aircraft could be slowed in order to fund higher RDT&E costs, which would delay the program overall and significantly reduce the number of aircraft procured over the FYDP. Recent reports indicate that DoD is headed in this direction.²²

Further stressing aircraft procurement accounts in the coming years, the Navy is projected to have a shortfall of carrier-based strike fighters that will peak in FY 2018 with



²² Tony Capaccio, “Gates Calls for Delay in Pentagon Purchases of Lockheed F-35s,” Bloomberg News, January 7, 2010. Accessed at <http://www.bloomberg.com/apps/news?pid=conewsstory&tkr=LMT:US&sid=a6JxZXWODUME>

Table 3: Top Aircraft Procurements

Program	Department	FY 2010 Request (in 000s)	Quantity
F-35 Joint Strike Fighter	Navy	\$4,212,096	20
V-22 (Medium Lift)	Navy	\$2,359,046	30
F-35 Joint Strike Fighter	Air Force	\$2,220,267	10
P-8A Poseidon	Navy	\$1,766,867	6
EA-18G	Navy	\$1,658,530	22
UH-60 Blackhawk (MYP)	Army	\$1,467,244	83
Spares and Repair Parts	Navy	\$1,266,277	0
F/A-18E/F (Fighter) Hornet	Navy	\$1,054,999	9
CH-47 Helicopter	Army	\$1,001,287	39
MH-60R	Navy	\$963,024	24

a deficit of 243 aircraft.²³ To mitigate this shortfall the Navy could procure additional F/A-18E/F aircraft or it could fund service life extensions for the current fleet of F/A-18A-D aircraft. Either option would require additional funding beyond what is already budgeted. A third option would be to reduce the number of carriers and carrier air wings, effectively downsizing the force structure to fit within resource constraints. The Air Force will experience a similar shortfall in strike fighters if JSF production is delayed. It could force the Air Force to choose between funding service life extensions for existing fighters, curtailing operations to conserve the remaining life of existing fighters, or retiring the oldest fighters without replacing them.

C. Ground Systems

Funding for the procurement of ground systems grew at a real annual rate of 10.0 percent since FY 2000, driven primarily by the wars in Iraq and Afghanistan. Without the war funding, the real annual rate of growth was 5.1 percent. But the rate of growth over the past ten years does not tell the complete story, as shown in the graph of procurement funding below. Ground systems procurement funding surged to record levels in FY 2008 with the procurement of 9,380 Mine Resistant Ambush Protected (MRAP) vehicles at a cost of \$16.8 billion in that year alone.²⁴ The base defense budget request for FY 2010 includes \$5.9 billion for ground systems procurement, with an additional \$3.4 billion from war funding.

The largest procurement program in the Army's portfolio was the Future Combat Systems (FCS), which included eight manned ground vehicles as well as other unmanned ground systems (e.g. robotic vehicles). In April 2009, Secretary Gates announced that DoD would terminate the manned ground vehicle portion of the FCS program, and in June the

²³ Christopher Bolkcom, "Navy-Marine Corps Strike-Fighter Shortfall: Background and Options for Congress," CRS Report, April 10, 2009, p. 2. Accessed at https://www.policyarchive.org/bitstream/handle/10207/20143/RS22875_20090410.pdf.

²⁴ DoD, "DoD FY 2010 Budget Request Summary Justification," May 2009, pp. 3-27.

overall FCS program was terminated. At its cancellation, the program was projected to cost \$159 billion (in then-year dollars) to equip just one third of the active force.

The Army immediately began developing a new set of requirements for a follow-on program to modernize its aging fleet of combat vehicles. Secretary Gates publicly stated that the FCS budget in the out-years would be protected in order to fund whatever new program emerged.²⁵ Moreover, development of the network component of the FCS program—

arguably the lynchpin of the system—was continued despite the termination of the overall FCS program.²⁶ Given these considerations, it is possible that the follow-on to FCS will be substantially similar to the program that was cancelled, in both the capabilities and funding required. FCS procurement costs were planned to reach \$6 to \$8 billion annually in FY 2014 and beyond, about as much as the budgets for all other ground systems combined.²⁷ This implies a real annual rate of growth of about 14 percent in the overall ground systems procurement budget.

Another area of budgetary uncertainty for ground systems is continued funding for the cost of resetting the force, specifically the cost of replacing equipment, since such a large portion of ground systems procurement funding comes from the war budget. Ground systems comprise much of the equipment lost or damaged in the wars in Iraq and

Ground Systems Procurement Funding
(in billions of FY 2010 dollars, includes war funding)

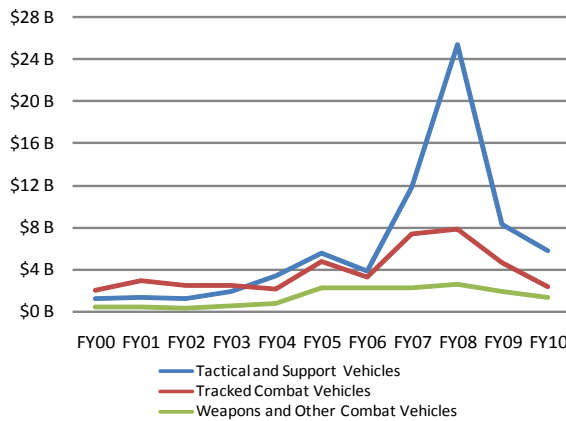


Table 4: Top Ground Systems Procurements

Program	FY10 Request (in 000s)
Family of Medium Tactical VEH (FMTV)	\$1,620,179
HI MOB Multi-Purp WHLD VEH (HMMWV)	\$1,532,161
Family of Heavy Tactical Vehicles(FHTV)	\$1,436,148
Bradley Program (MOD)	\$769,956
Mine Protection Vehicle Family	\$402,517
Stryker Vehicle	\$388,596
FCS Spin Outs	\$327,921
Common Remotely Operated Weapons Station	\$235,000
Abrams Upgrade Program	\$185,611
M1 Abrams Tank (MOD)	\$183,829

²⁵ Robert Gates, “Speech to the Army War College,” April 16, 2009.

²⁶ Evan Montgomery, “Life After FCS,” CSBA Backgrounder, August 2009. Accessed at http://www.csbaonline.org/4Publications/PubLibrary/B.20090826.Life_After_FCS/B.20090826.Life_After_FCS.pdf

²⁷ CBO, “Long Term Implications of the Fiscal Year 2009 Future Years Defense Program,” January 2009, p. 14. Accessed at <http://www.cbo.gov/ftpdocs/99xx/doc9953/01-06-DefensePlans.pdf>

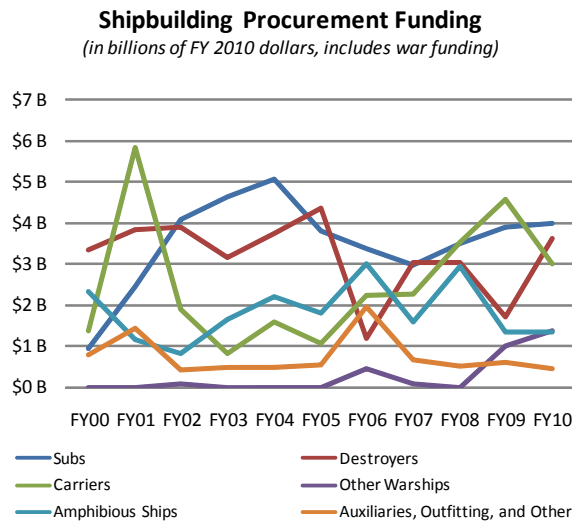
Afghanistan, and war funding has been used to fund the cost of replacement vehicles over the past eight years. But the policy on what is and is not considered a war-related replacement has varied during that time. The definition of what was considered a replacement cost gradually expanded starting in FY 2006, but the FY 2010 budget took a more narrow view. As a result, funding for replacement equipment fell from \$10.8 billion in FY 2009 to \$4.9 billion in the FY 2010 budget request.²⁸ If more of these costs migrate back into the base budget, they could substantially displace existing and future programs.

D. Shipbuilding and Conversion

Shipbuilding and conversion funding grew at a real annual rate of 4.6 percent over the past decade to a level of \$13.8 billion in the FY 2010 request. War funding has not had a significant effect on shipbuilding accounts, and in FY 2010 no shipbuilding funds came from the war budget. Unlike other procurement accounts, shipbuilding funding tends to be “lumpy” because it funds the procurement of a relatively small number of high value assets. As a result, the levels of funding can vary significantly from year to year depending on when different types of ships are procured. Over the past ten years, 29 percent of shipbuilding funding has been used for submarines, 26 percent for destroyers, 21 percent for carriers, and 15 percent for amphibious ships, among others.²⁹

By many estimates, the Navy’s shipbuilding account is significantly underfunded relative to its future plans. In its 30-year shipbuilding plan of FY 2009, the Navy stated its goal of achieving a 313 ship fleet in FY 2019. The CBO estimated that funding to support this plan would need to average \$21 billion annually from FY 2009 – 2013, about 30 percent higher than the Navy’s own estimate and more than 50 percent higher than the level of funding requested for FY 2010.³⁰ Just ramping up to a level of \$21 billion annually by FY 2015 would require growth at a real annual rate of 8.8 percent over the FYDP—nearly double the real annual rate of growth over the past ten years. To achieve a fleet of this size within the fiscal realities of the future, the Navy will likely need to procure a mix of ships that includes a greater number of less expensive platforms, such as the Littoral Combat Ship (LCS), and fewer multibillion dollar ships.

Recent changes to its shipbuilding plans indicate the Navy is headed in this direction. In the FY 2010 budget request, one of the savings announced by DoD was a shift from a



²⁸ DoD, “Fiscal Year 2010 Budget Request Summary Justification,” May 2009, pp. 4-50.

²⁹ These figures do not include the cost of outfitting ships with equipment, such as communications gear.
³⁰ CBO, “Resource Implications of the Navy’s Fiscal Year 2009 Shipbuilding Plan,” June 9, 2008, pp. 8-9.

Accessed at http://www.cbo.gov/ftpdocs/93xx/doc9318/06-09-Shipbuilding_Letter.pdf

four-year procurement schedule for aircraft carriers to a five-year procurement schedule. The Navy also decided to end production of the DDG 1000 destroyer and restart the less expensive DDG-51 production line. Secretary Gates announced in April 2009 that DoD would delay the Navy's CG(X) Next Generation Cruiser, a derivative of the DDG 1000, and it has since been reported that the Navy may cancel the CG(X) in its next long-term shipbuilding program in favor of a less expensive ship based on the DDG-51 hull.³¹

An additional factor that could affect the Navy's shipbuilding plans over the FYDP is the administration's change in plans for missile defense in Europe. The new system proposed would include sea-based interceptors initially, rather than the ground-based interceptors previously planned. According to CBO estimates, the new system could require nine dedicated ships (three deployed, three in maintenance, and three in training at any given time) to provide continuous coverage. Options for procuring this capability include: 1) buying additional Arleigh Burke-class destroyers at a total cost of \$19 billion, 2) buying additional Littoral Combat Ships equipped with the somewhat less capable AN/SPY-1F radar and vertical launch system at a total cost of \$6 billion, or 3) converting nine existing warships at a total cost of \$300 million.³² While the cost of the Aegis systems and SM-3 missiles would be funded through the Missile Defense Agency, the cost of the ships would be funded from the Navy's shipbuilding budget. In the FY 2010 request, the administration included \$200 million for the conversion of six warships, a possible first step toward pursuing the least expensive option. A notable downside of this approach is that the nine ships allocated for European missile defense would no longer be available for other missions.

Table 5: Top Shipbuilding Procurements

Program	FY10 Request
Virginia Class Submarine	\$3,924,042
DDG-51	\$2,241,263
CVN Refueling Overhauls	\$1,775,422
Littoral Combat Ship	\$1,380,000
Carrier Replacement Program	\$1,223,701
DDG 1000	\$1,084,161
LPD-17	\$1,056,947

E. Space Systems

The fastest growing area of procurement over the past ten years has been space systems. During that time, the budget for space procurements increased at a real annual rate of 16.2 percent, more than quadrupling from \$1.0 billion in FY 2000 to \$4.6 billion in the FY 2010 request (in FY 2010 dollars). These figures may even understate the rate of increase since they do not include funding for classified space systems or satellites procured

³¹ Inside Defense, "Draft Shipbuilding Report Reveals Navy is Killing CG(X) Cruiser Program," December 7, 2009.

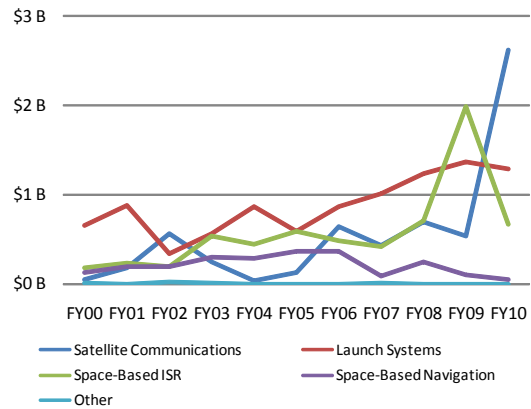
³² CBO, "Long-Term Implications of the Department of Defense's Fiscal Year 2010 Budget Submission," November 18, 2009, p. 14.

using RDT&E funds, such as the first two Advanced Extremely High Frequency (EHF) communications satellites. Over the past ten years, 39 percent of space systems funding has been used for launch systems, 26 percent for space-based ISR, 25 percent for satellite communications, and 10 percent for space-based navigation.

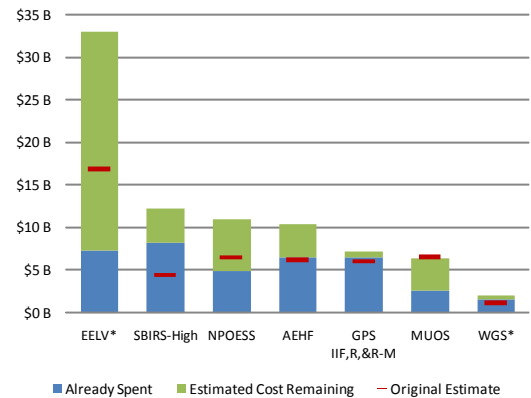
Plans for future space systems changed significantly in recent years with the termination of two flagship programs: Space Radar and Transformational Satellite Communications System (TSAT). Space Radar was a planned constellation of satellites to provide persistent, overhead radar surveillance. A notional constellation of nine satellites in low earth orbit was projected to cost \$35 to \$52 billion.³³ TSAT was planned as the next-generation military satellite communications system that would provide jam-resistant, high data rate communications to tactical and strategic users. It originally included advanced technologies, such as laser communications and a high-throughput Ka-band link for airborne platforms, but these capabilities were removed from the system in an attempt to reduce costs just months before the program was cancelled. The fully capable TSAT constellation was estimated to cost more than \$30 billion, and the revised constellation, with reduced capabilities and four satellites instead of five, was estimated to cost about \$20 billion.

Although TSAT and Space Radar were cancelled for poor performance and lack of affordability, they are not the only troubled programs in the DoD space portfolio. Of the other major space programs, almost all are over budget and behind schedule, including Global Positioning System (GPS) Block II, Space-Based Infrared System High (SBIRS-High), National Polar-orbiting Operational Environmental Satellite System (NPOESS), Wideband Global SATCOM (WGS), Advanced Extremely High Frequency (AEHF) system, and the Evolved Expendable Launch Vehicle (EELV).³⁴ Collectively, these space programs

Space Systems Procurement Funding
(in billions of FY 2010 dollars, includes war funding)



Current vs. Original Estimates for Major Space Systems
(in FY 2010 dollars)



³³ CBO, "Alternatives for Military Space Radar," January 2007, p. 22. Accessed at <http://www.cbo.gov/ftpdocs/76xx/doc7691/01-03-SpaceRadar.pdf>

³⁴ The Mobile User Objective System (MUOS) program has been on schedule and near its original cost estimate. However, it recently encountered problems during integration and testing which may cause it to exceed its original cost estimate as well.

are \$35 billion over their baseline cost estimates and will require \$45 billion to complete the current programs of record in the coming years.³⁵

These figures do not include the cost of additional spacecraft and new satellite programs that may be needed to replace some of the capabilities previously expected from TSAT and Space Radar. The National Reconnaissance Office is continuing to study future overhead radar systems. Likewise, the Air Force is planning a Military Satellite Communications (MILSATCOM) Analysis of Alternatives (AoA) to examine options for follow-on systems for its current AEHF and WGS constellations. When cancelling TSAT, Secretary Gates announced the procurement of two additional AEHF satellites, which would bring the constellation to a total of six, but the additional funding needed for these satellites was not included in the FY 2010 budget.

Table 6: Top Space Systems Procurements

Program	FY10 Request
Advanced EHF	\$1,843,475
Evolved Expendable Launch VEH (EELV)	\$1,295,325
Fleet Satellite Comm Follow-on (MUOS)	\$516,127
SBIR High	\$466,456
Wideband Gapfiller Satellites (WGS)	\$264,051
Defense Space Recon Program	\$105,152
Defense Meteorological Sat Program	\$97,764
Global Positioning System	\$53,140
Natl Polar-Orbiting OP ENV Satellite	\$3,900

F. Missile Defense

The missile defense budget in the FY 2010 request was \$9.2 billion, including both RDT&E and procurement. Procurement funding is less than 10 percent of overall missile defense funding (\$1.0 billion in FY 2010) and is used to buy additional Terminal High Altitude Area Defense (THAAD) interceptor missiles (\$420 million), SM-3 Block IA missiles (\$169 million), and Patriot/PAC-3 and Patriot/MEADS missiles (\$410 million). RDT&E and procurement funding for missile defense declined by 14 percent in real terms in the FY 2010 request due to a number of major program decisions announced by Secretary Gates in April. These decisions included cuts to the Airborne Laser (ABL) and Ground Based Midcourse Defense (GMD) programs and termination of the Multiple Kill Vehicle (MKV) and Kinetic Energy Interceptor (KEI) programs. Funding was increased for the THAAD and Aegis BMD programs. Despite the recent reduction in overall funding, missile defense spending (including RDT&E and procurement) grew by 45 percent from FY 2000 to FY 2010, a real annual rate of 3.8 percent.

Recent changes in missile defense programs shifted the focus from national missile defense systems, such as GMD, MKV, KEI, and ABL, to theater missile defense systems,

³⁵ Cost data derived from GAO, "Assessment of Selected Weapons Programs," March 2009. Includes both RDT&E and procurement costs. All cost figures were converted to FY 2010 dollars using GDP deflators. Data for WGS and EELV were taken from the 2008 assessment, since these programs were not included in the 2009 assessment.

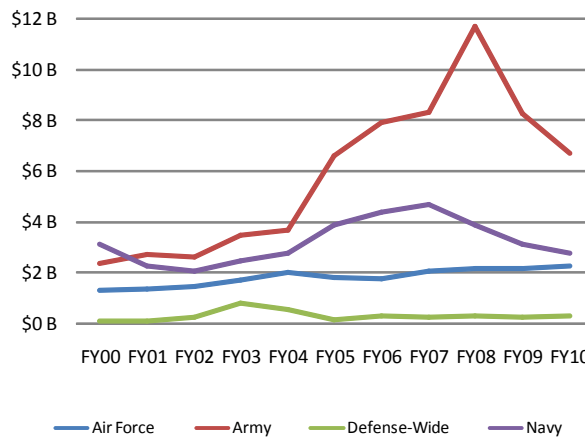
such as THADD, Aegis BMD, and Patriot. One concern is whether adequate funding will be available in the future to purchase a sufficient number of interceptor missiles for the GMD, THAAD, Aegis BMD, and Patriot systems to be effective. The FY 2010 budget ended procurement of Ground-Based Interceptors for GMD at 44 missiles (only 30 of which will be operational) with no replenishment program planned as missiles are depleted over time from regular test launches. As more THAAD batteries are deployed in FY 2010, production of interceptor missiles is increasing to a rate of four per month. If this production rate is sustained it would require \$780 million annually or \$3.9 billion over the FYDP (in FY 2010 dollars) and would only acquire 272 of the more than 1,400 interceptors planned.³⁶ Similarly, the FY 2010 budget increases the number of Aegis BMD capable ships to 27 but only raises the current inventory of SM-3 missiles to a total of 80—less than three missiles per ship.³⁷

G. Communications and Electronics

Since FY 2000, the procurement of communications and electronics equipment has grown at a real annual rate of 5.7 percent—faster than the rate of growth in acquisitions overall. However, much of this growth was due to the substantial amount of communications and electronics equipment procured with war funding. In the FY 2010 budget request, 28 percent of the communications and electronics procurement budget came from war funding. The Army has experienced a dramatic swing in funding over the past ten years, rising from \$2.4 billion in FY 2000 to \$11.7 billion in FY 2008 (in FY 2010 dollars) with much of this increase due to items procured using war funding. Without war funding, the communications and electronics budget grew at a real annual rate of just 3.2 percent.

The peak in Army funding for communications and electronics systems in FY 2008 was due to the rapid procurement of radios and satellite communications terminals. One of the largest expenses was the procurement of Joint Network Node (JNN) terminals, which peaked at \$1.4 billion of funding in FY 2008.³⁸ These commercial satellite communications

Comms & Electronics Procurement Funding
(in billions of FY 2010 dollars, includes war funding)



³⁶ Assumes a constant average procurement unit cost of \$16.2 million per missile based on the FY 2010 procurement budget. Total quantity of THAAD interceptors from <http://www.army-technology.com/projects/thaad/>, accessed January 4, 2009.

³⁷ DoD, “Fiscal Year 2010 Budget Request Summary Justification,” May 2009, p. 3-33.

³⁸ Department of the Army, “Committee Staff Procurement Backup Book: Fiscal Year (FY) 2010 Budget Estimates, OTHER PROCUREMENT, ARMY, Communications and Electronics, Budget Activity 2,” May 2009, pp. 130-9.

terminals are part of the Army’s planned Warfighter Information Network Tactical (WIN-T) modernization program but were funded primarily from supplemental appropriations for the wars in Iraq and Afghanistan. From FY 2003 to FY 2007, the Army also spent nearly \$4.0 billion more than was originally planned on tactical radios due to operational needs and delays in the delivery of Joint Tactical Radio System (JTRS) radios.³⁹ An estimated 90 percent of this funding came from supplemental appropriations.⁴⁰

The JTRS program began in 1997 with the goal of producing a family of software programmable, interoperable radios for use across 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. The restructured JTRS program also deferred key capabilities, such as the ability to communicate using the new Mobile User Objective System (MUOS) satellite constellation, to later increments. At the same time, the number of radios the Services plan to procure has decreased and the unit cost has increased, as shown in the table below.⁴¹ 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.⁴² If DoD maintains its current plan to procure some 194,000 JTRS radios, the JTRS program will require \$23 billion in procurement funding over the coming years (in FY 2010 dollars).

Table 7: JTRS Cost Estimates, includes both RDT&E and Procurement (in millions of FY 2010 dollars)

	Baseline Estimate			Current Estimate		
	Total Cost	Quantity	Unit Cost	Total Cost	Quantity	Unit Cost
JTRS AMF	N/A	N/A	N/A	\$7,993	11,107	\$0.720
JTRS GMR	\$16,996	108,388	\$0.157	\$16,767	86,652	\$0.194
JTRS HMS	\$9,792	329,574	\$0.030	\$3,053	95,961	\$0.032
JTRS NED	\$957	N/A	N/A	\$2,052	N/A	N/A

H. Classified Procurements

Funding for the procurement of classified systems has more than doubled since FY 2000, growing at a real annual rate of 7.8 percent. Not including war funding, which was 16 percent of classified procurement funding in the FY 2010 request, the real annual rate

³⁹ GAO, “Defense Acquisitions: Department of Defense Needs Framework for Balancing Investments in Tactical Radios,” August 2008, pp. 8-9. Accessed at <http://www.gao.gov/new.items/do8877.pdf>

⁴⁰ Ibid, p. 15.

⁴¹ Derived from GAO, “Assessment of Selected Weapons Programs,” March 2009, pp. 95-102. The unit cost used here is the Acquisition Program Unit Cost (APUC), which is the total RDT&E and procurement funding divided by the total number of units procured.

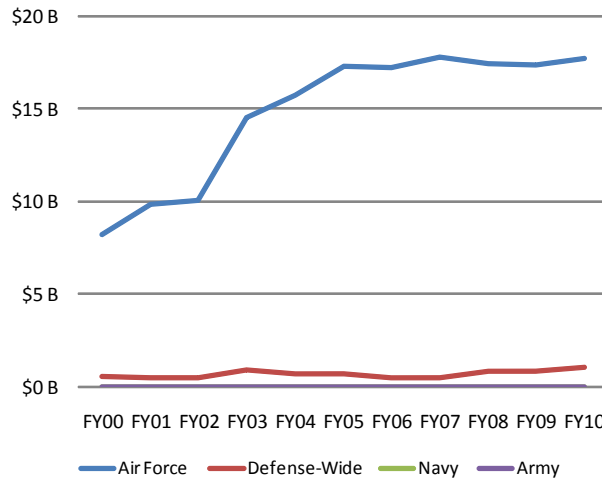
⁴² GAO, “Defense Acquisitions: Department of Defense Needs Framework for Balancing Investments in Tactical Radios,” August 2008, p. 20.

of growth drops to 6.3 percent. Over 90 percent of all classified procurement funding goes to the Air Force, and classified procurement makes up 44 percent of total Air Force procurement funding.

The rapid increase in DoD classified procurements over the past decade is primarily due to growth in Air Force classified programs. Air Force classified procurement funding increased by nearly 50 percent in just one year from FY 2002 to FY 2003. Classified funding is concentrated in the Air Force budget because it is responsible for many command,

control, communications, and intelligence functions, which tend to be heavily classified. The Air Force procurement budget is also 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).⁴³ Due to the nature of classified programs, little information is publicly available about how this funding is being spent. It is therefore difficult to determine if the rate of growth seen over the past ten years will continue in the future.

Classified Procurement Funding
(in billions of FY 2010 dollars, includes war funding)



Family Housing, Military Construction, and Other Funding

Family housing, military construction, and other funding increased at a real annual rate of 5.9 percent over the past ten years, from \$14.7 billion in FY 2000 (in FY 2010 dollars) to \$26.1 billion in the FY 2010 request. In FY 2010, the war budget contributed an additional \$1.8 billion. The rapid growth over the past decade was due primarily to military construction in the base budget, which more than tripled. Spending on family housing, in contrast, declined over the same period.

Funding for the base realignment and closure (BRAC) process is responsible for nearly all of the growth since FY 2006. Over the long-term, the BRAC process is designed to save DoD money by consolidating military bases and infrastructure, but there are substantial upfront costs. Spending related to the 2005 BRAC has totaled \$33 billion to date (in FY 2010 dollars), with funding peaking in FY 2009 at \$9.1 billion. By statutory requirement, DoD must complete its implementation of all BRAC recommendations by the end of FY 2011, meaning that this should be the last year of BRAC funding. According to DoD’s most

⁴³ Stephen I Schwartz, et. al., “Atomic Audit,” Brookings Institution Press, pp. 235-5.

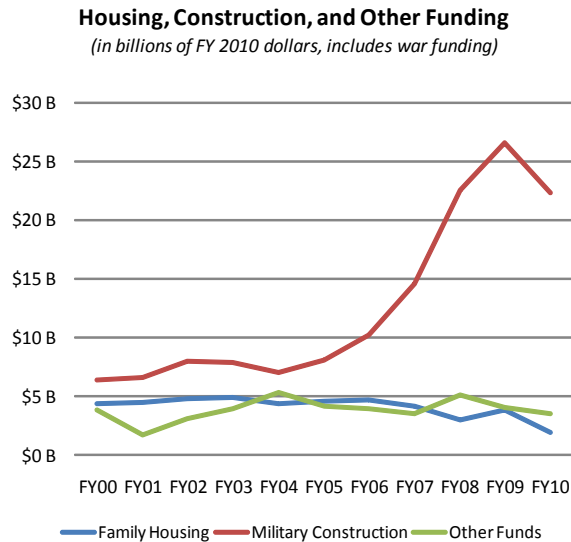
recent estimates, the 2005 BRAC will cost a total of \$36 billion (in FY 2010 dollars).⁴⁴ This implies that an additional \$3 billion in BRAC funding is projected for FY 2011.

From FY 2009 to FY 2010, the military construction and family housing budget fell by a total of \$5.9 billion. About \$1.5 billion of this was due to a planned decline in BRAC construction costs, and \$0.7 billion was due to a reduction in war-related construction costs. The rest of the difference may be due to the American Recovery and Reinvestment Act of 2009. Of the \$7.4 billion appropriated for the Department of Defense in the stimulus bill, \$2.9 billion was allocated for military construction and family housing.⁴⁵ This one-time appropriation increased the FY 2009 budget above what would have otherwise been appropriated for that year. It may also have had the effect of moving items that would have been funded in FY 2010 into FY 2009, further exaggerating the difference between the two years. With the end of the BRAC funding in FY 2011, and barring another stimulus bill, family housing and military construction spending should return to more stable levels in the FYDP.

The planned movement of some 8,000 marines and their 9,000 dependents from Okinawa to Guam will require new construction funding in the coming years. 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 US.⁴⁶ 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 derail the planned move to Guam.

War Funding

Twenty-one percent of all defense funding over the past decade was for the wars in Iraq and Afghanistan. From FY 2000 to FY 2009, the Department of Defense received a total of \$4.8 trillion in discretionary budget authority (in current year dollars), \$1.02 trillion of which was for the wars in Iraq and Afghanistan.⁴⁷ The administration originally requested



44 GAO, "Military Base Realignment and Closures," November 13, 2009, pp. 3-4. Accessed at <http://www.gao.gov/new.items/d1098r.pdf>

45 DoD, "American Recovery and Reinvestment Act of 2009: Department of Defense Expenditure Plans," March 20, 2009, pp. 2-7. Accessed at http://comptroller.defense.gov/docs/ARRA_DoD_Expenditure_Plans.pdf

46 DoD, "Fiscal Year 2010 Budget Request Summary Justification," May 2009, pp. 2-29 to 2-30.

47 Amy Belasco, "The Cost of Iraq, Afghanistan, and Other Global War on Terror Operations Since 9/11," September 28, 2009, pp. 13-4. Accessed at <http://www.fas.org/sgp/crs/natsec/RL33110.pdf>

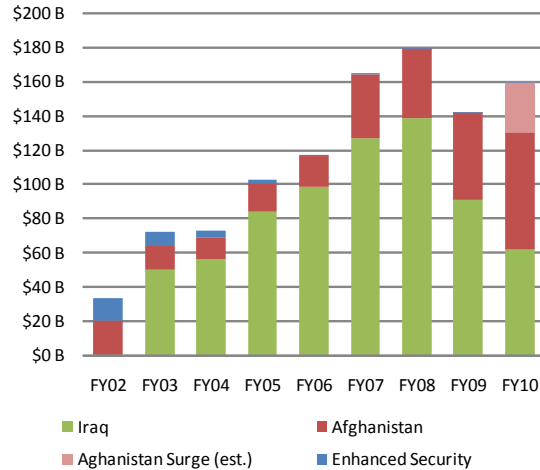
\$130 billion in FY 2010 for the wars, but the shift in strategy in Afghanistan, which requires an additional 30,000 troops, is expected to cost an additional \$30-35 billion annually.

The cost of the wars depends on a number of factors, including the operational tempo, the cost of supplies (such as fuel and food), and the terrain and infrastructure within which forces are operating. Many of these variables are not predictable or are not within DoD's control. However, data from the current conflicts suggests that a reasonable proxy for estimating the cost is the number of troops deployed in each theater. In

Afghanistan, the annual cost per troop since FY 2005 has ranged from \$0.86 million to \$1.53 million, averaging \$1.12 million.⁴⁸ Based on this historical data, the administration's projection that the surge of an additional 30,000 troops in Afghanistan will cost an additional \$30-35 billion annually appears to be accurate. While there are a number of factors that could cause this figure to increase or decrease, it is consistent with the cost per troop experienced in Afghanistan to date.

The cost per troop figure is calculated by dividing the total cost of the war for a given year by the average number of troops deployed in theater for that year. For example, in the FY 2010 budget request (before the surge was announced) the administration requested \$68 billion to support roughly 68,000 troops deployed to Afghanistan. War funding includes all costs incurred by DoD related to the war, such as the cost of additional fuel, ammunition, other expendable items, and the additional pay and benefits service members receive while deployed. War funding does not include the cost of regular pay and benefits or other expenses that DoD would have incurred in normal peacetime operations. As a result, only about \$66,000 of the \$1.1 million cost per troop per year is spent directly on military personnel in the form of incentive pay and additional benefits and healthcare.⁴⁹

DoD War Funding
(in FY 2010 dollars)



What to Watch: FY 2011 and Beyond

Defense spending over the past decade, particularly the high rates of growth experienced in many areas, allowed DoD to postpone making many difficult decisions, and set the stage for the challenges DoD now faces in the FY 2011 budget. If the base defense budget continued growing at the 4.0 percent real annual rate seen over the past ten years,

⁴⁸ Todd Harrison, "Estimating Funding for Afghanistan," CSBA Update, December 1, 2009. Accessed at http://www.csbaonline.org/4Publications/PubLibrary/U.20091201.Estimating_Funding/U.20091201.Estimating_Funding.pdf

⁴⁹ Figure is derived by adding the military personnel and Defense Health Program costs from the FY 2010 war request and dividing by the total number of troops projected to be deployed. Assumes the pay, benefits, and healthcare costs per troop does not vary between Iraq and Afghanistan.

it would reach \$563 billion dollars in FY 2011. If it continued growing at that rate over the FYDP, it would cost a total of \$357 billion more than the zero real growth scenario. Given the state of the federal budget overall, it is unlikely that this rate of growth will continue. A less ambitious 2 percent real annual rate of growth would cause the budget to grow to \$552 billion in FY 2011 and cost an additional \$175 billion over the FYDP.⁵⁰

The challenge for DoD is not how to adapt to a lower budget but rather how to adapt to a budget with little or no real growth. It will force the Department of Defense to prioritize within accounts more so than in previous years. And since some accounts already have growth built in, it will force DoD to make difficult trades across accounts, particularly between the people who serve and the weapon systems they depend on. In the past, the solution has been to downsize the force structure—both the people and the equipment. However, this is not an attractive option today because the force structure is already stressed with the ongoing conflicts in Iraq and Afghanistan.

In preparing for the release of the FY 2011 budget, there are a number of items to watch that will signal how the Department of Defense intends to balance these competing demands. Below is a list of watch items based on the above analysis of trends in the defense budget over the last decade, sources of cost growth, and programs or policies that will affect future costs. While it is by no means a complete list, it highlights some of the key decision points in the upcoming budget that will have a significant impact on the military for years to come.

⁵⁰ Costs projected over the FYDP are shown in then-year dollars.

Watch Items for FY 2011

<i>Operations and Support</i>	
Pay	<ul style="list-style-type: none"> Do proposed pay raises for military personnel and DoD civilians equal or exceed the ECI?
Healthcare	<ul style="list-style-type: none"> Do military healthcare costs continue to grow at 5 to 7 percent annually over the FYDP (as previously projected)? Are increases in premiums and / or co-pays proposed to help offset cost growth?
End Strength	<ul style="list-style-type: none"> Is the temporary increase in Army end strength funded through the war budget and does it remain temporary? Do the Navy and Air Force reduce end strength to free up funding for other priorities (such as equipment recapitalization)?
Acquisition Workforce	<ul style="list-style-type: none"> Does the budget fully fund the 20,000 person increase in the acquisition workforce and the conversion of 30,000 service support contractors to DoD civilian positions?
<i>Acquisition</i>	
Strike Fighters	<ul style="list-style-type: none"> Does the Department use the Joint Estimate Team's higher cost estimate and longer development schedule for JSF? Are increases in development costs offset by cuts in the number of aircraft procured over the FYDP? Does the Navy procure additional F/A-18E/F aircraft to hedge against delays in JSF deliveries? Does the Air Force fund service life extensions for existing fighters or propose the retirement of additional fighters without replacements?
FCS Follow-On	<ul style="list-style-type: none"> Is the Army able to maintain a funding wedge for the follow-on program to FCS, or is it forced to scale back or delay its modernization plans?
Navy Shipbuilding	<ul style="list-style-type: none"> Does the Navy increase its shipbuilding budget to fully fund its current shipbuilding plan, or does it adjust its plan to fit within resource constraints?
European Missile Defense	<ul style="list-style-type: none"> Does the Department buy new ships to support European missile defense, or does it opt to convert existing ships for this mission instead?
Interceptor Missiles	<ul style="list-style-type: none"> Does funding for procurement of interceptor missiles, particularly for THAAD and Aegis BMD, keep pace with the deployment of these systems?
TSAT Follow-On	<ul style="list-style-type: none"> Are the two additional AEHF satellites previously announced funded over the FYDP? Are additional WGS satellites funded to help offset the loss in future capacity due to the termination of TSAT? Does work on space-based laser communication continue?
JTRS	<ul style="list-style-type: none"> Do the Services fund for the procurement of JTRS radios in the quantities currently planned or do they scale back their plans?

- Reset Costs**
- Do reset costs, particularly the cost of replacement ground vehicles, migrate into the base budget or do they remain separately funded through the Overseas Contingency Operations budget?

Family Housing and Military Construction

- BRAC**
- Is all BRAC-related funding completed in FY 2011?
- Guam**
- Is construction funding for the planned move of Marines from Okinawa to Guam included in the FYDP?
- Overall Funding Levels**
- Do military construction and family housing budgets return to more stable levels over the FYDP?

Overall

- War Funding**
- Are detailed projections of war funding in future years included with the budget? Does it assume roughly the same cost per troop per year for Afghanistan as today?
- New Programs**
- What new programs are funded in the FYDP, such as a next generation bomber or cruise missile? Does RDT&E funding continue its gradual shift away from early research activities toward later development activities?
- Deficit Reduction**
- What steps, if any, are taken in the defense budget to help reduce the federal deficit in future years?
- Alignment w/QDR**
- How well does the FY 2011 budget align with the policies and priorities in the 2010 QDR?

About the Center for Strategic and Budgetary Assessments

The Center for Strategic and Budgetary Assessments (CSBA) is an independent, nonpartisan policy research institute established to promote innovative thinking and debate about national security strategy and investment options. CSBA's goal is to enable policymakers to make informed decisions on matters of strategy, security policy and resource allocation.

CSBA provides timely, impartial and insightful analyses to senior decision makers in the executive and legislative branches, as well as to the media and the broader national security community. CSBA encourages thoughtful participation in the development of national security strategy and policy, and in the allocation of scarce human and capital resources. CSBA's analysis and outreach focus on key questions related to existing and emerging threats to US national security. Meeting these challenges will require transforming the national security establishment, and we are devoted to helping achieve this end.