



# **SPIRIT BLOOD AND TREASURE**

**The American Cost of Battle in  
the 21st Century**

**Donald Vandergriff, Editor**

# Spirit, Blood, and Treasure

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The American Cost of Battle  
in the 21st Century

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## Exiting the Defense Death Spiral: Will the Lessons Learned from the Last QDR Be Applied Today?

On 19 May 1997, Defense Secretary William Cohen released the results of the Defense Department's first Quadrennial Defense Review (QDR I). The QDR I was the Pentagon's third attempt to construct a post-Cold War military strategy, and like its two predecessors, the so-called Base Force designed by the Joint Chiefs of Staff in 1990<sup>1</sup> and the Clinton administration's Bottom-Up Review of 1993,<sup>2</sup> QDR I failed utterly to weave forces and budgets into a realistic military policy reflecting the changed conditions of the post-Cold War world. In fact, all three reviews simply mashed existing Cold War programs and doctrine into a smaller force structure and then justified the status quo, particularly the retention of the Cold War modernization program, by repackaging legacy systems in a new "strategy" of fighting two major theater wars (MTWs) nearly simultaneously. The two-MTW strategy might be thought of as a two half-war strategy (i.e., in the Persian Gulf and Korea) when compared to the one-and-one-half war strategy of the Cold War (i.e., a NATO-Warsaw Pact war plus a regional war in Korea or the Persian Gulf). In the fall of 2000, military and civilian officials in the Pentagon's bureaucracy, with input from supporting actors in the military-industrial-congressional complex (MICC), were beginning to develop a new QDR for submission in October 2001, hereafter referred to as QDR II.

Will QDR II produce a more relevant product than its fatally flawed predecessor?

While it is impossible to answer a question before the fact, the omens are not auspicious. One thing is clear: QDR II will be the product of a hydra of committees inside the Pentagon, as well as special training programs orchestrated by special QDR offices and special QDR staffs. Taken together, the ongoing flurry of preliminary point papers and briefings suggests that the military services will once again use the QDR process to build a fortress protecting their favorite programs.

By avoiding the hard decisions now, the Pentagon bureaucracy is an odds-on favorite to repeat the mistakes it made in 1990, 1993, and 1997. Such a repetition would make it easier for reactionary elements in the MICC to protect their parochial interests at the continued expense of our fighting forces and the taxpayers who pay for them. The Pentagon struck out for the third time with QDR I in 1967, and the view from the cheap seats suggests it is about to fall into the same trap.

This time, however, America cannot afford another procrastination that ends up in the dustbin of history. Put simply, we are running out of time. We already squandered the opportunity of a lifetime to put our house in order during the 1990s; QDR II is about the next decade. It will be the basis for planning the fiscal year (FY) 2003 to 2007 Future Years Defense Plan (FYDP). But it will also put into place or rationalize decisions that have financial burdens reaching much farther into the future. The Joint Strike Fighter (JSF) and the army's transformation program, for example, will have profound production and force structure consequences reaching well beyond 2015 and 2020, even if they unfold as planned, which is highly unlikely. If QDR II does not put the Defense Department's house in order, and it once again fails to account for the future consequences of current decisions, the defense death spiral of low readiness and deteriorating rates of modernization will tighten and become steeper in the coming years—just when our rising budget requirements begin to crash into the skyrocketing financing requirements that are the inevitable concomitant of an aging population.

### Aim

My aims in this chapter are threefold: First, I will briefly describe the most important results of QDR I to orient the reader to the problem. Second, I will attempt to explain why these decisions did not adapt the military to the changed conditions of the post-Cold War era. Finally, I will close by laying out a conceptual framework for producing the decision-making information needed to remedy these failures while evolving a strategy that works in a post-Cold War world made up of unpredictable threats, evolving patterns of conflict, changing opportunities, and uncertain, albeit ever-tightening, resource constraints.

### QDR I: Results in Brief

The leaders of the Defense Department paid lip service to the changed conditions of the post-Cold War world, but QDR I ducked the hard decisions needed to adapt our people, ideas, and hardware to them. The 1997 QDR reaffirmed the strategy of being prepared to fight two major theater wars nearly simultaneously. It also committed the military to a strategy of global engagement, wherein a large portion of our forces are deployed overseas in peacekeeping operations such as Bosnia, Haiti, and no-fly zones over Iraq.

The QDR made a few modest changes in force structure, most notably a reduction of fifteen warships and the transfer of an air force fighter wing to the reserves. But most importantly, it retained the main elements of the Defense Department's combat power: ten active army divisions, three active marine divisions, twelve carrier battle groups, twelve amphibious ready groups, twenty active and reserve air force tactical fighter wings, and 187 strategic bombers. I and many other observers do not believe this force structure is large enough to execute the two-MTW strategy, particularly when the high rate of overseas rotations reduces readiness by wearing out equipment, degrading training, and depressing morale.

Reports of a rapidly deteriorating readiness situation began to surface in the press almost as soon as the QDR I was published. On 18 August 1997, for example, George Wilson, the dean of defense

reporters, wrote in *Navy Times* that the Internet is awash with back-channel E-mail traffic documenting the mounting anger and frustration of troops in the field. Since then there has been a veritable flood of E-mail and newspaper reports describing a steadily deteriorating readiness situation. Some policy makers and defense intellectuals dismissed these reports as being merely anecdotal. In retrospect, the continuing flood has buried the criticism and, in fact, subsequent events have shown them to be more accurate in a qualitative sense than official statistics. This should not be surprising, since they document the firsthand experience of the soldiers, sailors, airmen, and marines charged with and dedicated to carrying out the Defense Department's mission.

The troops speak of shortages of repair parts and engines, aging equipment, rising rates of cannibalization, morale-busting "work-arounds," increased workloads, longer hours, obsolete technical manuals, decreased opportunities for realistic training, understrength units, decaying infrastructure (one colonel wrote to me saying he was forced to use crack sealant to keep his disintegrating airport parking ramp from washing away in thunderstorms), excessive deployments, an unresponsive medical system, and more frequent family separations than during the Cold War. The army, always the first service to feel the pinch, faces recruiting problems, personnel shortages, and a massive exodus of captains. Many older officers are retiring after their squadron or battalion command tours, leaving a growing gap in the ranks of colonels and navy captains with command experience. In the army, for example, the number of lieutenant colonels and colonels turning down command tours increased by six between 1992 and 1995 (1.5 per year) to 171 between 1996 and 2000 (34.2 per year), an annual rate increase of twenty-three times.<sup>3</sup> The best and the brightest of our junior officers and enlisted men are also turning down promotions, refusing assignments to prestigious schools, and leaving the military in droves.<sup>4</sup>

Most alarming, in my view, is the growing breakdown of trust between senior and junior officers. The seniors say readiness and people are the Defense Department's top priority, yet they spend billions to buy unneeded Cold War weapons, while basic needs in the

field go unmet. Even the official Armed Forces Day posters from 1996 through 1999—which depicted a parade of high-tech hardware—celebrated weapons instead of the patriotic sacrifices of our soldiers, sailors, airmen, and marines. Not surprisingly, a growing number of junior officers now believe their seniors will sell them out rather than risk their careers by making hard decisions.<sup>5</sup> They are voting with their feet. These officers view attempts to retain them with lucrative bonuses as bribes. The fact that companies are hiring makes it easier to leave, but it is not the central cause of their exodus.

The QDR I neglected these problems, and it set the stage for worsening them by attempting to shift money from the operating budget to the modernization budget. To this end, it reduced personnel by 60,000 active military (4 percent), 55,000 reservists (6 percent), and 80,000 civilians (11 percent). Nevertheless, the ratio of people to forces will still be higher than it was during the Cold War. By September 2000, the army, air force, and marines said, in effect, that they needed to reverse course and add at least 25,000 and possibly more than 50,000 people to their end strength.<sup>6</sup> The QDR called on Congress to authorize two more rounds of base closures and to permit increased outsourcing of government activities to the private sector. On the other hand, the QDR made no specific recommendations in these areas and, in effect, passed the buck to a Congress paralyzed by the narcotic of defense spending. Congress chose not to close any more bases.

Most importantly, the first QDR reaffirmed the high-cost modernization program that was put into place just as the Cold War ended. Although it canceled no major programs, it attempted to reduce the rise of future budgets by slowing production rates and/or truncating total procurement quantities for several high-cost weapons programs, most notably the F-22, F-18E/F, and JSF programs, the V-22 Osprey tilt-rotor program, and the Joint Surveillance and Target Attack Radar System (JSTARS).

In the area of technology, QDR I reiterated the Defense Department's commitment to an automated see-decide-strike theory of warfare known as the Revolution in Military Affairs (RMA). The RMA is a *system of systems* consisting of intelligence, surveillance, and

reconnaissance sensors to find targets; an automated command, control, and communications system to decide which targets to strike and to control weapons launch decisions; and a variety of long-range, precision-guided weapons to carry out the actual attacks.

The RMA is not even a revolution in thinking. In fact, the conceptual roots of this techno-strategy lie in Robert McNamara's vision of an electronic defense line in Vietnam, a multibillion-dollar fiasco known as Task Force Alpha/Igloo White. Although this vision was resurrected in several variations in the 1970s and 1980s, planners were unable to convert it into an effective system during the Cold War. Now, its latest incarnation is supposed to "revolutionize" the nature of a regional war against an undefined "near-peer" competitor on a hypothetical electronic battlefield in the year 2010. At the core of RMA is a radical hypothesis that would cause Sun Tzu, Clausewitz, and George Patton to roll over in their graves: Namely that technology will transform the fog and friction of combat (i.e., the uncertainty, fear, chaos, imperfect information, and other uncontrollable factors that are a natural product of a clash between opposing wills), into clear, friction-free, predictable, mechanistic interaction. Kosovo should have been a wakeup call regarding the flaws inherent in the RMA techno-strategy, but all evidence now available suggests that its lessons will continue to be ignored in QDR II.<sup>7</sup>

Finally, QDR I capped off Cold War business-as-usual by increasing the National Missile Defense (a.k.a. Star Wars) budget by \$2 billion. We have poured over \$60 billion into these technologies and have yet to field a single combat system.

The internal contradictions and priorities of the QDR have a common denominator: They put the profits of defense contractors and the interests of the congressional pork barrel before the welfare of the soldier or the taxpayer. Secretary William Cohen arrived at the Pentagon too late to change the direction of the 1997 QDR, and it is probable that he will be gone before the release of QDR II, but it has been his responsibility in the intervening years to put the Defense Department on a sensible evolutionary pathway in the twenty-first century with the 2001 QDR. This did not happen, as at-

tested to by a general worsening of the modernization and readiness crises during the intervening four years. What follows is one insider's opinion of the current problems undermining our military.

### **Why QDR I Failed to Produce a Realistic Post-Cold War Military Strategy**

To fix our current problems, we need to understand why our previous attempts failed. The first QDR descended into another banal defense of the status quo because planners resolutely refused to consider how internal constraints shape strategy over the long term. These internal constraints emerge because the costs of buying and operating weapons always grow faster than the defense budget, even when budgets increase rapidly, as they did in the 1980s. Moreover, a corrupt accounting system prevents planners from appreciating the destructive effects of these asymmetric growth rates and renders it impossible to assemble the detailed information needed to sort out these problems. Each of these internal problems is discussed following.

#### **Problem 1: Cost Growth Greater than Budget Growth**

The long-range modernization program will not produce enough new weapons to modernize the smaller forces of the post-Cold War era. This conundrum has led to repeated calls for sharp increases in the modernization budget. The real cause of the production /inventory mismatch is that the unit costs of buying and operating the new weapons will continue to increase much faster than the budgets for those weapons, even if budgets exceed Cold War levels early in the next century.

Nevertheless, some people in the Pentagon and Congress believe the budget has been cut too much and that the only way to build a robust military strategy is to pour more money into the defense maw. To be sure, defense spending (\$285 billion) is down 24 percent in inflation-adjusted dollars from what it was on average between 1983 and 1992, and modernization budgets have declined by an even greater amount. But comparisons with the 1980s



are misleading, because, as Table 15-1 shows, that decade was by far the most expensive of the Cold War. When the current spending level is viewed in a longer-term context, the data in Table 15-1 show that \$285 billion is about equal to that averaged during the other two "peacetime" decades of the Cold War<sup>8</sup> (1953-62 and 1973-82), given the large uncertainties inherent in calculating the effects of inflation over a period of decades. In any case, comparisons with Cold War budgets are meaningless, because the jus-

**Table 15-1: Annual DoD Outlays  
Budget Category 051: Constant FY 2001 \$**

FY 2000 Outlays	\$285 Bill	Current Spending (% Reduction From)
<b>Post Cold War</b>		
Avg. FY 1993-2000 (Clinton 8 Yrs)	\$292 Bill	-2%
<b>Cold War</b>		
Avg. FY 1983-1992 (Reagan-Bush)	\$376 Bill	-24%
Avg. FY 1973-1982 (Post-Vietnam)	\$286 Bill	-0%
Avg. FY 1963-1972 (Vietnam)	\$344 Bill	-17%
Avg. FY 1953-1962 (Post-Korea)	\$304 Bill	-6%

**Source:** Office of the Under Secretary of Defense (Comptroller), *National Defense Budget Estimates for FY 2001*, March 2000, Table 6-11

tification for those expenditures, the Soviet/Warsaw Pact threat, does not even exist.

When evaluating the adequacy of today's budget, it is also important to remember that the size of our military is much *smaller* than at any time during the Cold War. Compared to the force levels reached during the 1980s, for example, combat units have been reduced by greater amounts than a 24 percent spending cutback would suggest. Air force tactical fighter wings, for example, have been slashed by 50 percent, ships in the navy's battle fleet by about 40 percent, and the army's active-duty maneuver battalions by 44 percent. Although one might think these disproportional cutbacks are unique adjustments brought about by the end of the Cold War, they are really part of a continuing evolution that began in the mid-1950s.

Why does the much smaller post-Cold War military require a Cold War budget to keep it running?

In 1996 I published an article in *Challenge* that used as a case study what was happening to tactical aviation in the air force to illustrate why the Pentagon's long-range modernization plans are setting the stage for a budget time bomb that will detonate early in the next century. We can compare the results of the QDR to the problems I raised in that case study to determine how the QDR changed the situation.

In 1996, the air force planned to spend \$86 billion to buy 982 F-22 and JSF fighter aircraft between 1996 and 2013. This program was supposed to modernize a force structure of twenty tactical fighter wings, or a total inventory of about 2,200 to 2,300 airplanes. The overwhelming majority of the new airplanes (792 aircraft, or 81 percent) would be purchased between 2003 and 2012 for a total of \$68.6 billion at an average cost of \$86.7 million per plane, assuming no cost overruns (all dollars are expressed in FY 1996 constant dollars).

The most expensive decade of the Cold War for tactical aviation was 1983 to 1992, when the air force spent \$50.3 billion (in FY 1996 dollars) to buy 1,800 tactical fighters at an average cost of \$28 million per copy. What would the planners in the first QDR have seen if they had compared those numbers to the ten years between 2003

and 2012? They would have seen that the air force intended to spend 36 percent more than it spent in the most expensive decade of the Cold War to buy 56 percent fewer fighters, because unit costs would increase by 210 percent, or almost *six times* faster than the budget. To make matters worse, they would have also seen that the low rate of production between 2003 and 2012 would come after a decade of almost no production. Only 116 airplanes were authorized for purchase between 1993 and 2002 while the F-22 and JSF were in development.

Bear in mind, however, that the post-Cold War force of twenty tactical fighter wings in 1997 was only half the size of the level reached in the mid-1980s. It was much smaller than at any time since 1950. Yet the planners in the first QDR would have seen that the turnover they were projecting for that inventory would be the lowest in history. They thus were making a policy decision to increase the average age of a fighter from its 1996 level of 9.6 years to an all-time high of 19.2 years in 2006, where it would level off until 2013. With a very modest amount of research, they would have discovered that this would be by far the highest average age since the dawn of fighter aviation in 1914. A simple calculation would have shown them that an average age of 19.2 years implies a retirement age of 40 to 42 years, once the need to replace crashed airplanes was taken into consideration. Perhaps they might have drawn the following analogy: If their predecessors in the Army Air Corps had executed the same kind of plan to buy Spads in 1918, the air force would have retired them in 1960.

If the QDR I planners had done their homework in 1996 and 1997, they might also have realized that no one knows how expensive it will be to operate high-tech airplanes when they are that old. One thing is certain, however. The increasing maintenance burden of old technologies will drive up operating costs at the same time we are trying to increase the modernization budget, balance the federal budget, and accommodate our plans to the looming financial demands of Medicare and Social Security.

Finally, had they done their homework in 1996 and 1997, the QDR I planners would have been driven to an inevitable conclusion. Something will have to give, and if past is prologue, they will be forced to reduce readiness and eliminate our combat forces to

save the modernization program. They would have understood that, since combat power will decline—even if budgets increase to greater than Cold War levels—their job was to construct a strategy that prevented this destructive evolution from occurring.

Unfortunately, the planners participating in the first QDR did not do their homework. Consequently, the QDR I report did not even mention any of these problems. In fact, its decision was to make a bad plan worse. It retained the twenty-wing force structure, but in order to reduce growth in the mushrooming modernization budget, it cut the total buy of F-22s and JSFs from 982 to 771 aircraft, or by 21 percent, between 1998 and 2013. Moreover, it cut back the maximum production rate of the F-22 by 25 percent, from forty-two to thirty-six per year, and it slowed the JSF's buildup to maximum production by two years (2012 versus 2010).

The decisions made in 1997 decreased the inventory turnover ratio and accelerated the rate of age growth, which will worsen all the pathologies I described above and in the *Challenge* article. When I published my original critique of QDR I in the fall of 1997, I said, "We can expect mounting economic pressure to reduce force structure and/or combat readiness as the older equipment becomes more expensive to maintain and operate, and as pressure to transfer money from operations to modernization increases. We can expect that the contractors will use these production cutbacks as an excuse to raise their prices. We can expect more cost overruns to compound these pressures. Most importantly, we can expect morale to decrease as troops are forced to do more with less. We can expect professionalism to decline as our best people become disgusted and leave the service."<sup>9</sup> Unfortunately, this prediction was born out by subsequent events.

While the case of air force tactical aviation is perhaps the most extreme example of the general problem, costs are growing faster than budgets and equipment is getting older in all mission areas. As long as these economic realities continue, our military will decline in combat power; the arithmetic of compound growth is ineluctable. The defense budget bomb will detonate at about the same time the spending requirements for retiring Baby Boomers begin to push the cash outflows of Medicare and Social Security into the stratosphere.

### Problem 2: The Pentagon's Bookkeeping Shambles

One of the problems in 1997 was the impossibility of producing a budget linking current decisions to past expenditures or to the future expenditures implied by those decisions. The QDR I planners completely ignored implications of the well-documented fact that the Pentagon's accounting system was broken. The situation is even worse in 2001.

In my 1996 article I made only a passing reference to the bookkeeping crisis. I cited a November 1995 congressional hearing where auditors from the General Accounting Office (GAO), the Defense Finance and Accounting Service, and the Defense Department's inspector general (DoD IG) testified that at least \$20 billion of expenditures could not be matched to the items they purchased. Subsequent audits show that \$20 billion was just the tip of a much larger iceberg.

On 11 June 1996, the GAO updated the November 1995 audit, reporting again that the Defense Department's bookkeeping system cannot link between \$20 and \$30 billion in actual expenditures to the items that money purchased. Ten months later, on 30 April 1997, in a second update, the GAO said problem disbursements had increased to \$43 billion. The Defense Department comptroller objected, saying the problem disbursements amounted to only \$18 billion.<sup>10</sup>

A little over a month later, the DoD IG released a report saying it could not audit the more than \$80 billion Defense Business Operations Fund (DBOF), because its "financial systems continue to lack a sound internal control structure."<sup>11</sup>

Then, on 19 November, the DoD IG released a report saying it could not audit the FY 1995 army and air force General Fund financial statements as required by Public Law (PL) 101-576, the Chief Financial Officers Act of 1990. This law requires the annual preparation and audit of financial statements for trust funds, revolving funds, and substantial commercial activities of all the executive departments. However, under the provisions of PL 101-576, the DoD IG was not required to render an opinion on the Navy and other defense agencies until 1996. The DoD IG issued a disclaimer

of opinion, saying in its executive summary: "The overarching deficiency was the lack of adequate accounting systems for compilation of accurate and complete financial data. Specifically, the Army and Air Force Audit Agencies were unable to render audit opinions on their Military Departments' FY 1995 General Fund financial statements because of inadequate accounting systems; a lack of audit trails; unsupported amounts for several types of assets, liabilities, and expenses; unreliable financial information; and poor internal controls." The DoD IG also noted that the "requisite [i.e., corrective] systems will not be in place before FY 2002."<sup>12</sup>

Bear in mind that the General Fund encompasses the overwhelming majority of defense expenditures.

On 10 April 1997, the DoD IG released three new audit reports of the military services' FY 1996 financial statements. The Air Force Audit Agency, for example, could not verify the acquisition costs of \$282 billion in assets and found a \$20 billion discrepancy between estimates made by the air force and the Defense Logistics Agency for the value of the same inventory of government-furnished property. The Navy Audit Service reported its ammunition value "contained material omissions amounting to at least \$20.4 billion and improper inclusions totaling at least \$11.6 billion." The Army Audit Agency reported that the values of its inventory (\$38 billion), its military equipment (\$81 billion), and its real property (\$27 billion) were all "misstated by an *unknown* but probably material amount."<sup>13</sup>

On 16 April 1998, the DoD IG issued disclaimers of opinion on fifteen of fifteen DoD accounts for FY 1997. Included in this report was the report that the Defense Financing and Accounting Center in Indianapolis made \$350 billion worth of supported adjustments to the general ledger accounts in the army's General Fund (which probably totaled no more than \$70 billion) to match the corresponding status of appropriations data. On 1 March 1999, the DoD IG waived its FY 1998 audit, saying that it had found \$1.57 trillion in unauditable adjustments in the DoD accounting system.

On 25 February 2000 the IG issued yet another disclaimer of opinion in its audit for FY 1999, reporting that there were \$2.3 trillion in unsupported accounting adjustments in a total \$6.9 trillion of data entries used to prepare DoD's financial statements. The in-

spector general said \$2.6 trillion was supportable, but that another \$2 trillion had not been examined. These and other reports can be found by following the links at the Defense and the National Interest web site.<sup>14</sup>

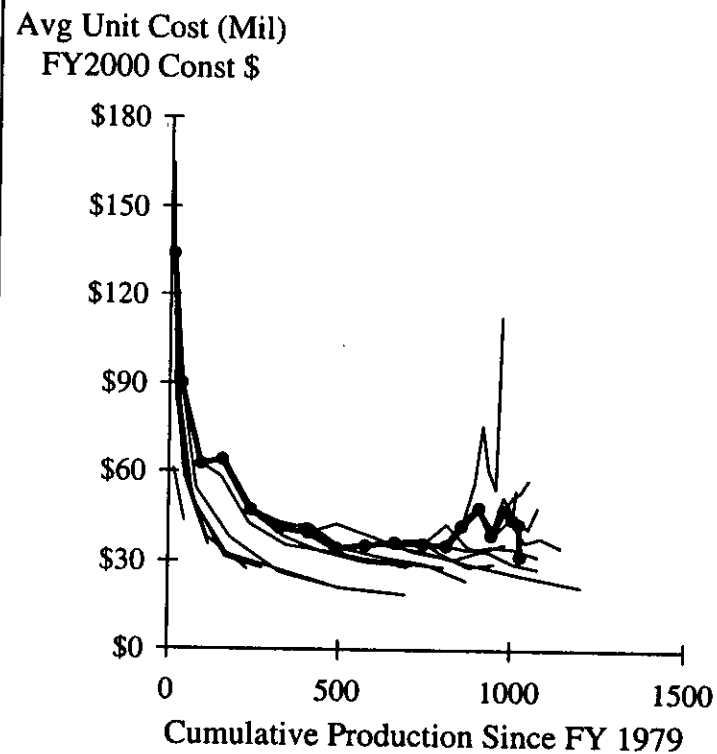
The bookkeeping mess is not limited to past expenditures, however. It is also evident in estimates of our program plans. Each year, the Defense Department produces a five-year (or six-year) budget plan known as the Future Years Defense Plan (FYDP). Ironically, while the authors of QDR I confidently spouted visions of military-technical revolutions on electronic battlefields in 2010, they were unable to construct a coherent "vision" of what such weapons would cost in three to five years. This becomes painfully evident when one compares a weapon's cost projections in the future years of one FYDP to those in other FYDPs.

State-of-the-art data processing technologies now make it possible to perform such comparisons across many FYDPs for any line item in the defense budget. To this end, we have combined the last twenty-one FYDPs into a ninety-megabyte database. This database permits a planner to examine how accurately the cost, quantity, and budget predictions of our production plans matched up to what really happened (in inflation-adjusted dollars). The database and the methodology underpinning these comparisons have been validated by a GAO audit made at the request of Senators Charles Grassley (R-Iowa) and William V. Roth Jr. (R-Delaware).<sup>15</sup> Figures 15-1 and 15-2 are typical examples of these comparisons and will be used to illustrate the nature of the plans/reality mismatch.

Figure 15-1 compares the differences between the planned and actual costs of the navy's F-18C/D fighter, a major weapon system developed by McDonnell-Douglas. The F-18 entered production in 1979. Figure 15-2 is a comparable depiction for an air force runway cleaner, a typical example of a minor procurement item.

The information in our database shows that the long-range cost predictions made during the preproduction stage of a major weapon's life cycle almost always understates its eventual production costs by very large amounts. The F-18 is a typical example of this bias. Figure 15-1 relates the average annual cost of an F-18 (vertical axis) to the total number produced (horizontal axis). The av-

**Figure 15-1. Navy F-18 Models C thru D**  
A Comparison of Predicted Costs to Actual Costs



Heavy Line : Actual Quantities & Actual Costs  
Thin Lines : Predictions of Successive FYDPs

erage annual costs can be thought of as an approximation of each additional F-18 produced, or what an economist would refer to as "marginal costs."

The heavy black line with the ball-shaped markers depicts the *actual* cost versus the number of F-18s produced. This portrayal is known in the Pentagon as a *learning curve*. The thin lines show the *planned* learning curves contained in each of the five-year plans. All costs have the effects of inflation removed and are depicted in constant FY 1997 dollars.<sup>16</sup>

Figure 15-1 can be read as follows: Since the first year of F-18A's production was 1979, the horizontal distance between each ball represents the total purchases up through the end of the year in question. The first seven years of production, for example, take us from FY 1979 to 1985 and are depicted by the seven balls closest to the left. The heavy black line shows we bought a total of about four hundred F-18As during those seven years. It shows that *actual* unit costs declined from about \$135 to \$40 million per copy during this part of the production run. So, as would be expected, marginal costs declined as production increased.

Now, let us compare these actual costs to the F-18's *predicted* costs (i.e., the thin lines). Note how the earliest plans (the thin lines farthest to the left) are far below the solid black line. Figure 15-1 shows how the early plans predicted that the four hundredth F-18A would cost about \$24 million. Thus, in the case of the F-18, we have a mismatch between plans and reality. Actual costs declined from \$135 to \$40 million per copy between 1979 and 1985. The four hundredth F-18 still cost 67 percent more than the \$24 million per copy originally predicted for this point in its production life cycle. Since the marginal costs did not decline as fast and as far as predicted, the preproduction plans misrepresented the future consequences of the production decision. Moreover, the overlapping character of the thin lines shows that this misrepresentation was a repetitive phenomenon.

The structural bias to understate future costs is the first step in a systematic political effort to suck money out of Congress. It reflects the well-known bureaucratic power game of *front loading* or *buying in*. The scam is to deliberately "low-ball" future cost estimates in or-

der to obtain a commitment to begin concurrent engineering and manufacturing development (known as EMD). Once the government approves this commitment, the defense company can expend contract dollars (i.e., tax dollars) on investments to establish a production base and a nationwide network of suppliers. The EMD decision, in effect, gives the contractor permission to use public money to build his political protection network by systematically spreading subcontracts and production facilities to as many congressional districts as possible. The spreading operation is known as *political engineering*.

When the true costs of a politically engineered program eventually emerge, as they clearly did in the case of the F-18, the political stakes have become so high that neither Congress nor the Pentagon can muster the will to cancel the program. Instead, decision makers on both sides of the Potomac cut back production rates to reduce total costs in order to protect their constituents' jobs and profits. Viewed in the context of the defense power games, the production stretch-outs of the QDR are a predictable, indeed inevitable, consequence of business as usual in the MICC.

Lower rates of production naturally decrease the rate of inventory turnover, which causes weapons to become older and more expensive to operate. To make matters worse, deficient production rates create growing economic pressures to transfer money from the operating budget to the modernization budget at the same time the rising cost of operating the older weapons makes it more difficult to do so. Consequently, over time, something has to give—and the routine response is to cut combat readiness and/or shrink the number of combat units. The decisions of the first QDR were entirely consistent with this business-as-usual evolution, so it should have come as no surprise that the twin crises of deteriorating readiness and rapidly aging force (which is a reflection of the modernization crisis) would continue to worsen over time, as it did.

Some people argue that the plans/reality mismatch depicted in Figure 15-1 is an unavoidable consequence of technical complexity and of being at the cutting edge of new technologies. Figure 15-2 ought to put this argument to rest. It portrays the plans/reality mismatch for a simple low-tech system: a street sweeper that the air

force uses to clean its runways. Like Figure 15-1, the heavy line in Figure 15-2 compares actual costs to predicted costs in a "learning curve" format. The chaos speaks for itself.

If the QDR I planners had done their homework, they might have understood these well documented bookkeeping problems, but they ignored completely the logical, strategic, and constitutional implications of the bookkeeping shambles.

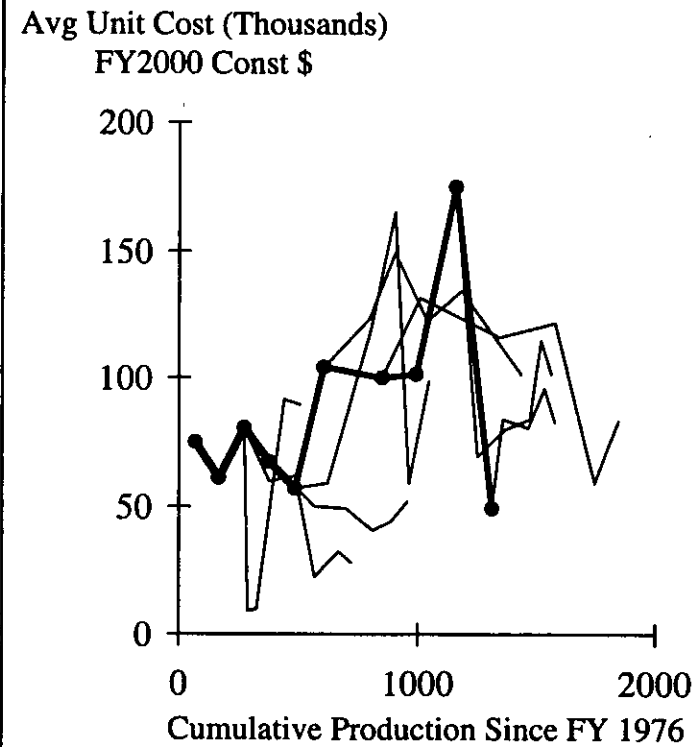
The QDR I report contained elegant statements about the strategic vision of an electronic battlefield in 2010, yet its authors could not even account for money that is being spent today, let alone accurately foresee the future consequences of today's budget decisions. Thus, it was logically impossible for them to construct a coherent road map to 2010. The QDR strategy is headed for the dustbin of history because it was *not connected* to the real world.

If the banality of the QDR does a disservice to the American soldiers who may be asked to put their lives on the line sometime in the future, the Constitutional implications of the Pentagon's budget shambles are even more shocking.

The central premise of any representative democracy is that the people can hold the people's representatives accountable. The framers of our Constitution understood this and designed a system of checks and balances to ensure that accountability. One of those checks is that every member of the U.S. government makes a sacred oath to uphold the spirit and the letter of the Constitution. Another check is Article 1, Section 9, Clause 7, which requires Congress to publish a "regular Statement and Account of the Receipts and Expenditures of all public Money" from time to time. The Defense Department's continued toleration of the bookkeeping crisis makes a mockery of this requirement and therefore violates the spirit, if not the letter, of the Constitution. The cavalier treatment of our oath to support and uphold the Constitution insults the American taxpayers being asked to pay the bill. Left unchecked, it undermines our form of government.<sup>17</sup>

The next section describes how we could build a strategy that works in the real world of uncertain threats, changing opportunities, and constrained resources.

**Figure 15-2. AF Street / Runway Cleaner**  
A Comparison of Predicted Costs to Actual Costs



Heavy Line : Actual Quantities & Actual Costs  
Thin Lines : Predictions of Successive FYDPs

### Teach the Pentagon to Think Before It Spends

The first QDR was intended to produce a strategic vision of the future, yet it did not account for the future consequences of current decisions. This kind of planning was by no means a new phenomenon in the Pentagon. Politicians and defense intellectuals have complained for years that the Pentagon cannot determine priorities because it has no strategy. The legislation passed by Congress in 1996 mandating a Quadrennial Defense Review was but one example of this longstanding frustration. Nevertheless, in one strategic review after another, the critics have recommended and defense planners have executed the same step-by-step procedure to solve the strategy conundrum:

1. Identify national goals and the threats to these goals
2. Determine the strategy to counter the threats
3. Determine the forces needed to execute the strategy
4. Determine the budget needed to build and maintain these forces

That this Cartesian procedure cannot solve the strategic puzzle ought to be clear from the recurrent calls for yet more strategy reviews.<sup>18</sup> Although this mode of thinking is not a direct cause of the readiness, modernization, and bookkeeping problems discussed above, the formulaic determinism of this procedure shackles our minds and prevents us from producing solutions. This becomes clear when one examines how the logic underpinning of this chain of dependencies prevents an interaction with the environment.

In theory, each step of the four-step procedure depends on the preceding step but is independent of the subsequent step. Strategy is the key link in this chain. It ties our relations to the outside world (goals and threats) to our internal conditions (forces and budgets). But it is wrong to think that strategy depends only on external factors, like goals and threats, and is independent of internal conditions.

The fatal flaw in the logic of this procedure becomes apparent if one applies the four-step formula to a simple military problem. Sup-

pose a battalion commander is given a mission-type order to defend against a threat on his division's flank. Under the concept of mission orders he is told *what* to do but not *how* to do it. He therefore needs to formulate a plan for accomplishing his mission. If he used the Pentagon's method to solve his "strategic" problem, he would define his plan *before* he examined how personnel or materiel limitations might shape or limit his maneuver and fire options. His operational plan, for example, would not be affected by the fact that one-third of his battalion had been wounded in a previous engagement and the other two-thirds was short of ammo. This is nonsense.

In the real world, *strategy is the art of the possible*, and any strategic decision-making procedure that ignores how one's internal constraints might limit or shape what is possible is a contradiction in terms.

Strategy *should* link our relations with the external world (goals and threats) to our internal conditions (the constraints of forces and resources). A biologist would view strategic planning as a selection process that harmonizes the internal structure of the organism with the demands of its environment. One side of the link does not uniquely determine the other, but each simultaneously feeds back on and shapes the other. The environment shapes the organism while the organism shapes the environment. Like evolution, strategic decision making should be a creative process of *combination* and *selection* in an ever-changing, coevolving domain consisting of external threats and opportunities on one hand, and changing internal structures and limitations on the other. The shaping effects of positive feedback in this interaction make strategic planning a non-linear, nonsequential mental activity.<sup>19</sup> That is one reason why intuitive behavior is so important on the battlefield.

Viewed from this perspective, strategic decision making is a *synthetic* activity and by nature simultaneous, constructive, creative, and adaptive.

Compare the richness of this view to the sterility exhibited by the Pentagon's four-step process. This rigid procedure is an *analytical* recipe for a *dissection* that follows a predictable, sequential, non-adaptive path. By nature, it is not creative, which is the main reason why repeated strategic reviews always produce a plan that protects

the status quo. The analytical elegance of the recipe may appeal to intellectuals housed in Cartesian towers, but the primitive assumption that strategy uniquely determines forces and budgets in effect presumes that resources (money) are unlimited.

In the real world, where messy bureaucratic conflicts bubble up out of a clash of competing agendas, this kind of *unconstrained* thinking provides no incentive for making the hard decisions needed to discover a harmonious set of priorities among incommensurable but nevertheless competing options. Unconstrained thinking simply adds things together into unaffordable wish lists.

Furthermore, by ignoring internal constraints like resource limitations, our strategists abdicate their responsibility for making hard decisions. That puts the onus on others to make the real decisions—the bean counters, budgeteers, and pork barrelers. These people have different agendas—as evidenced by the fact that recent votes in Congress suggest that the preservation of jobs is now the real goal of our nation's defense "strategy."

A strategic planning process should *discover* priorities by systematically exploring the interplay among the uncertainties surrounding the external threats and opportunities, on one hand, and those uncertainties surrounding our internal structures and constraints, on the other. The following proposal sketches out a *combination-and-selection* process that explicitly addresses the coevolving essence of strategic planning. Rather than viewing priorities as an input, which is another way of saying we start with the answer, the following proposal views priorities as an output, or, more precisely, it views priorities as an *emergent property* of a complex adaptive trade-off process.

### Strategic Planning as a Complex Adaptive Process-Theory

By far the most important internal constraint shaping the evolution of our military capabilities is the perpetual budget squeeze. Since this squeeze is a consequence of behavior patterns that produce an economic relationship wherein costs always grow faster than budgets, a necessary condition for a competent decision-making activity is to make the long-term consequences of this asymmetry evident before decision makers lock themselves into a given course of ac-

tion. But a requirement to make the long-term consequences of current decisions visible before the fact embodies a necessary precondition: reliable information.

Job One, therefore, is to fix the Pentagon's accounting problems, or at least reduce them to an acceptable level.

Fixing the books is not sufficient to produce a sound strategy, but it is self-evident that a more reliable description of our internal conditions, as well as the future consequences of changes to those conditions, would give planners the wherewithal to better understand the strengths and weaknesses of a given defense program in terms of its perceived match up, or mismatch, with external reality. Greater knowledge accompanying a more accurate description of our readiness and modernization problems, combined with state-of-the-art computer software technology, would make it possible for planners to understand how internal structures and capabilities of our military forces would change over a range of long-term budget scenarios—from optimistic to pessimistic. Under the different constraints imposed by each scenario, planners could determine the marginal effects of different force structure combinations in terms of achieving goals and neutralizing threats. By using a trial-and-error process of combination (which unleashes creativity and imagination) and evaluation (which uses testing and logic to discipline the imagination), planners could maximize strengths and minimize weaknesses of alternative combinations in order to gradually select (i.e., evolve) the most capable force structure option within the constraints of each given budget scenario. In so doing, planners would use their judgment to discover priorities (which are a reflection of the opportunity costs of *incommensurable* capabilities) by evolving the least painful program cuts as they move from higher to lower budget levels. The iterative process of combination and evaluation would also identify the best way to add programs should the budget come in at higher levels.<sup>20</sup> By disciplining the selection process in this way, priorities—or core values—would *emerge naturally* out of a free competition in a marketplace of ideas.

Contingency planning and sensitivity analyses are common enough in war planning and business planning. There is no reason why they cannot be done for defense program planning. Three



phases of operation are needed to translate this abstract idea into concrete action. The first phase cleans up the books, the second phase constructs service-level contingency plans, and the third phase synthesizes the service plans into a comprehensive Defense Department contingency plan.

### Phase I: A Program Freeze to Clean Up the Books

The Defense Department's annual budget, as submitted to Congress, is the linchpin of an accounting continuum (the FYDP database) reaching backward for two years to record actual expenditures and forward for five or six years to record programmed future expenditures. Looking backward, the coherency of a defense strategy (and its supporting force structure, modernization, and readiness levels) depends in part on the consequences of past expenditures. But the auditing problems revealed by the GAO and the DoD IG are proof that we cannot link past expenditures to today's budget and policy decisions.

The future years of the FYDP database are also disconnected from the budget. Figures 15-1 and 15-2 are but two illustrations of hundreds of FYDP/reality mismatches evident for at least twenty years in the FYDP database. At the macroscopic level, these mismatches have created a boiling programmatic soup in which low-balled numbers breed like metastasizing cancer cells throughout the entire defense program. Biased numbers hide the future consequences of current policy decisions, permitting too many programs to get stuffed into the out years of the long-range budget plan. This sets the stage for unaffordable budget bow waves, repeating cycles of cost growth and procurement stretch-outs, decreasing rates of modernization and older weapons, shrinking forces, and continual pressure to bail out the self-destructing modernization program by robbing the readiness accounts.

The end of the Cold War in 1990 provided a unique opportunity to take decisive action without jeopardizing our national security, but that opportunity was squandered over the next decade. Consequently, a decisive correction will be more painful today than it otherwise might have been, yet the readiness and modernization melt-

down of the late 1990s cries more urgently for that decision action. To be decisive, the military services *must* have better decision-making information. They will need at least a year to begin the necessary book-cleaning operation.

Rather than approving QDR II, which will perpetuate the defense death spiral because it will duck the accounting problems, the president and secretary of defense should suspend immediately the ongoing FY 2003–2007 budgeting cycle and order a one-year program freeze. The purpose of the freeze is to buy the time needed to begin scrubbing the books. During this period, DoD decision makers would strive to maintain or increase their flexibility to make future decisions (needed in Phases II and III). To this end, they would make no new long-term contractual commitments during the program freeze. All acquisition milestones would be postponed, but existing programs, like the F-22, would continue on a "work-in-progress" basis. On the other hand, decision makers would proceed with any actions that would increase the Defense Department's flexibility or adaptability into the future, including planned terminations, cutbacks, and base closings. They would also remove special-access clearances for all programs except intelligence programs. "Black budget" clearances stifle accountability, increase costs, and hide unprincipled behavior. Doubters should study the navy's A-12 debacle, where the contractor deliberately underbid the contract and could not deliver on its promises but won a lawsuit for the damages caused by the program's cancellation because the government violated the law.<sup>21</sup>

Such a program freeze will be disruptive and create economic inefficiencies in the short term, but that is the price leaders must pay now to obtain greater efficiency and strategic coherence in the long term. While programs are frozen, DoD audit agencies will undertake a maximum effort to do comprehensive financial audits of the expenditure control system, the FYDP database, and the assets assigned to each organization. One of their main goals would be to build a solid foundation for assembling a DoD-wide double-entry accounting system for tracking transactions, matching transactions to appropriations, and building an effective management accounting system so decision makers have the wherewithal to know what is

going on inside their own organization. At the same time, war planners would commence a comprehensive readiness audit of the current condition of each military service (including the real factors affecting morale, retention, training, doctrinal development, and materiel condition). Using the more realistic cost numbers produced by the financial audits, each military service would then build a new FY 2003–2007 high-readiness baseline program by repricing the procurement and operations and maintenance budgets in the approved program (i.e., the existing FY 2002–2007 program plus any unfunded requirements) submitted to Congress the preceding January.

Taken together, these repriced budget estimates would become the new DoD baseline budget scenario, which will require substantially larger budgets than the plan approved by the president and sent to Congress. The stage is now set for Phase II.

#### **Phase II: The Construction of Component Planning Options**

In Phase II, planners in each military service and independent defense agency would use the more reliable information produced by Phase I as a basis for examining how the internal capabilities and structures of their service would change over a range of optimistic to pessimistic budget scenarios (defined below), assuming each service's historic share of the total defense budget remained constant in each scenario. These shares will be subject to change in Phase III, but they are necessary in Phase II to get the process started.

The objective of Phase II is to discover the parochial priorities of each military service in the context of that service's worldview, according to the theory of combination and selection outlined above. To this end, military planners in each service would be free to construct their most effective force package within each given budget scenario by maximizing its strengths and minimizing its weaknesses while conforming to that scenario's overall resource constraints. Service planners would be *free* to use their parochial perspectives to define the threats they will face. The only restriction on that definition would be a requirement to classify each threat guiding their planning options according to the taxonomies of second, third, and

fourth-generation warfare as defined in the introduction to this anthology.<sup>22</sup> This classification is necessary to establish a common frame of reference for evolving and evaluating the global syntheses of Phase III. Subject to this restriction, planners would use their perspectives and judgment to shape and identify preferred force structures (together with the supporting modernization strategies and readiness states) in a way they think best addresses the threat uncertainty. By constraining their planning options to each budget level, service planners would go through a selection process that naturally identifies opportunity costs and evolves their own service's parochial priorities by identifying the least painful programmatic adjustments as one moves from higher to lower budget levels and the most beneficial adjustments as one moves from lower to higher budget levels. Each military service would conclude the sensitivity analyses of Phase II by producing a comprehensive net assessment of the force package selected for each budget level. Such a net assessment would identify the long-term military consequences (i.e., the preferred strategy, strengths, weaknesses, risks, and opportunities) of the force structures, together with the supporting readiness states and modernization strategies for each package. The final product at each budget level, together with the net assessments and the common taxonomy under which each net assessment is structured, become a Component Planning Option (CPO). The selected sets of CPOs evolved by each service in Phase II become the basic building blocks for the defensewide or global selection process in Phase III.

A crucial decision for Phases II and III is selecting a realistic and appropriate range of future budget scenarios. The remainder of this subsection discusses this choice.

The budget constraints are necessary to discipline the selection process at the microscopic and the macroscopic level of organization. It is therefore absolutely imperative that these budgets span a realistic range of the future possibilities we are likely to experience in the real world rather than merely portray the budgets we want to experience. The choice, therefore, boils down to a question of how much is enough over the long term. Like most normative questions, the question of how much we *should* spend is a matter of judgment for which there will never be a clear answer.

While many factors combine to shape this judgment, two general ones stand out and must be explicitly accounted for in any strategic planning process. The first is external. This relates to the threats facing our forces and what our nation wants to do in the world. The second is internal. This relates to the constraints that limit our action. These internal constraints define what is possible over the long term and require explicit consideration of internal limitations such as available technology, evolving demographic conditions, and competing nondefense priorities, as well as economic restrictions. Before examining these external and internal factors, let us establish a point of departure by describing the budget world the Pentagon and its supporters *want* to see.

#### **The Status Quo Ante: A Description of a World the Pentagon Wants to See**

In recent years, there has been a growing chorus of calls by Pentagon planners, retired military officers, defense lobbyists, contractors, and members of Congress for substantially higher defense budgets, notwithstanding the complete disappearance of the Cold War threat. That threat justified the high budget levels between 1951 and 1990. Since the threat evaporated, the calls for higher budgets are driven by internal factors—especially the need to bail out the effects of the rapidly rising unit costs of buying and operating weapons, which is a self-inflicted wound caused by the defense power games.<sup>23</sup>

These calls came to a head in June 2000 when the service chiefs submitted their Program Objective Memoranda (POMs) to the Secretary of Defense.<sup>24</sup> The POMs identified about \$180 billion in unfunded requirements over the next six years.<sup>25</sup> Subsequent events showed, however, that the \$180 billion shortfall was only the opening bid in an election year auction. Later in the summer, several former service chiefs and high-ranking civilian defense officials made public calls for a defense budget increases to at least 4 percent of GDP.<sup>26</sup> In September, the Congressional Budget Office (CBO) issued a report concluding that the defense strategy was underfunded by about \$50 billion per year, or an increase of \$300 billion over the next six years.<sup>27</sup> On 27 October, Secretary of

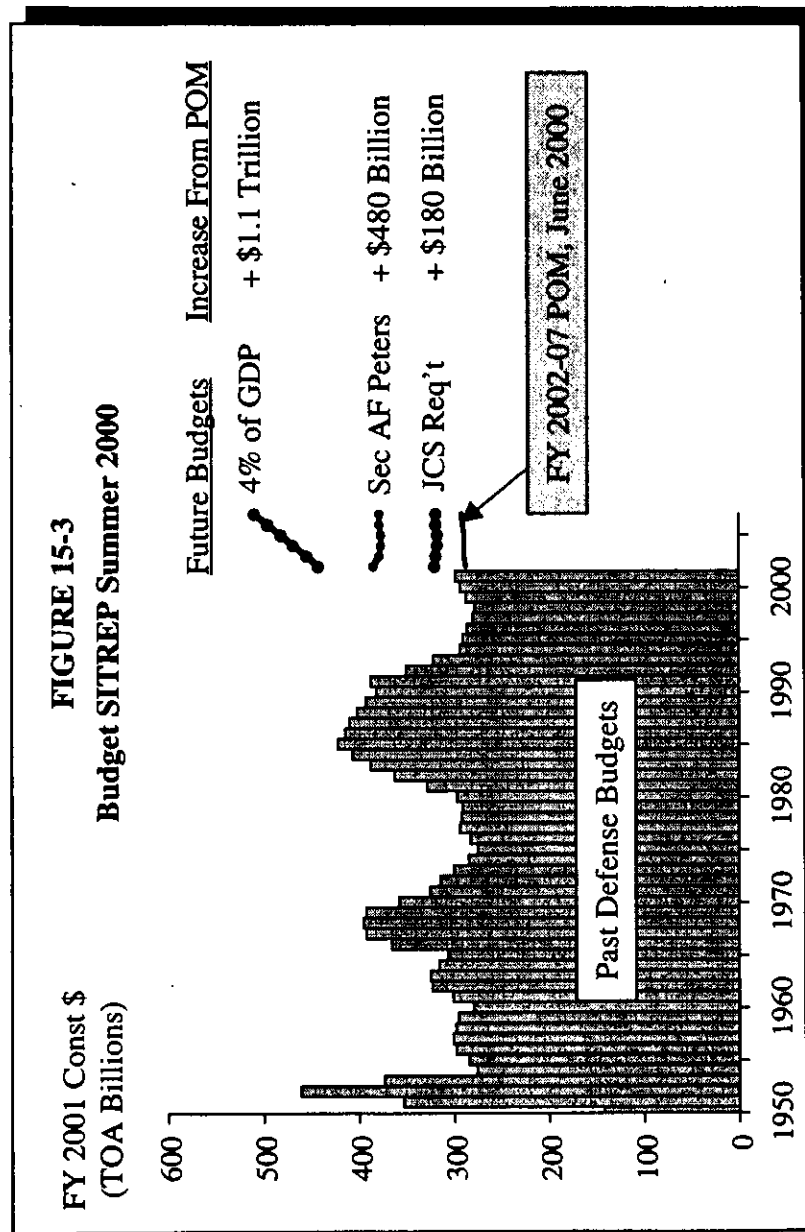
the Air Force Whitten Peters claimed the Defense Department needs \$80 to \$100 billion more per year over the next six years to replace aging weapons and improve readiness in the twenty-first century.<sup>28</sup>

Of course, every call for increased spending, including the CBO's (which should have known better), ignored completely the obvious logical contradiction that the bookkeeping shambles made it impossible to produce credible future budget estimates. Nevertheless, even the members of the Senate Budget Committee, with the sole exception of Sen. Charles Grassley, were completely unconcerned about the Constitutional and managerial implications of the CBO's oversight.<sup>29</sup>

Figure 15-3 places the range of the budget increases cited previously in a historical perspective and compares them to the fiscal guidance in the Clinton administration's last POM (i.e., the FY 2002–2007 POM). Note that the effects of inflation have been removed and all dollar values are expressed in FY 2001 constant dollars.

Figure 15-3 is a picture of a future from the Pentagon's perspective. It portrays the world the Pentagon wants to see and compares that vision to the world as it has been. It should be read as follows: The bars represent the actual historical budgets appropriated by Congress over the last fifty-one years. The free-floating lines, with the exception of the Clinton POM, portray the range of the hopes and dreams of those calling for higher budgets in the future (the CBO estimate has been omitted to reduce clutter.) All estimates of future spending have the effects of inflation removed and are expressed in comparable FY 2001 dollars.

The lowest forward-projecting free-floating line in Figure 15-3 depicts the fiscal guidance of the FY 2002–2007 POM—roughly \$289 billion per year, or 86 percent of the \$338 billion average per year during the forty years of the Cold War (1951–1990). The POM represents the budget levels the services were told to plan for by the secretary of defense. Bear in mind that combat forces are generally 40 to 50 percent smaller today than they were in the mid-1980s (and much smaller than in the 1950s and 1960s), so under this POM guidance, spending per unit of combat power would be higher than it was during any period of the Cold War, including the peak year of the Reagan spending spree.



Referring again to Figure 15-3, the free-floating line labeled “JCS Req’t” (just above the POM) represents the added effect of the unfunded requirements identified by the military services in their POM submissions (as of June 2000). These budget levels equate to about \$318 billion per year in constant FY 2001 dollars. If we compare this level to the \$338 billion per year average during the Cold War, Figure 15-3 shows that the military services believe a budget equal to 96 percent of the Cold War average is now necessary to fully fund the much smaller forces of the post-Cold War era. Note that the projection of the unfunded requirements would be higher in constant dollars than most Eisenhower budgets, which supported far larger forces.<sup>50</sup>

The horizontal free-floating line above the unfunded requirements line shows what an increase of \$80 billion per year would look like. This is the low end of Air Force Secretary Peters’s call for an additional \$80 to \$100 billion per year to solve the Defense Department’s readiness and modernization problems. If implemented, Secretary Peters’s low option would cost taxpayers about \$369 billion per year or 9 percent more per year than the \$338 billion per year average during the Cold War.

Finally, the rising line in Figure 15-3 portrays the mother of all budget calls. It shows what a defense budget equal to 4 percent of GDP would look like. The 4 percent calculation is based on the GDP estimates agreed to during the Office of Management and Budget’s midsummer review completed in July 2000 (it would look virtually the same if based on the CBO’s GDP estimate). Clearly, the proponents of the 4 Percent Solution believe the vanishing threats of the post-Cold War era are so serious that the United States must now spend far more on defense in inflation-adjusted dollars than at any time since the mobilization for total war during World War II.

Of course, these pictures of the world the Pentagon wants to see are *all* pie in the sky guesses, without a substantive basis. That is because they are based on calculations that did not account for the undeniable fact the Defense Department’s accounting system is so unreliable its detailed transactions cannot be audited, according to the repeated reports of the DoD IG and GAO.

Moreover, without other reforms to correct the pathologies of the defense power games, a continuation of business as usual under

these budget scenarios means that decision makers will use the added money to continue front loading too many high-cost production programs into the defense budget. If such a front-loading operation takes place within the context of the higher budgets assumed in Figure 15-3, the resulting FYDPs will be packed once again with too many programs, thus setting the stage for a future meltdown from an even higher level of spending!

As shown in Figure 15-3 the exploding budgets implemented, would be tantamount to a declaration of budget war on the Social Security and Medicare accounts. This is a war the Pentagon cannot and should not win.

The hopes and dreams portrayed in the status quo ante of Figure 15-3 are a portrait of the budget world the Pentagon wants to see. These portraits of the future also paint a picture of intellectual processes that are clearly disconnected from reality. When responsible people (like the secretary of the air force and the Marine Corps commandant) and organizations (the CBO and the Air Force Association) produce this kind of information, it is time to find a better way of doing business.

The lunacy portrayed in Figure 15-3 is really a wake-up call. We can no longer afford to make decisions based on this kind of nonsense. The best way to begin a process of real reform is to construct a more realistic picture of emerging reality to guide planners. The next section discusses the external factors shaping this picture, and the following subsection discusses the internal factors shaping this picture.

#### **How Much Is Enough? Accounting for the Vanishing Threat**

The second- and third-generation threats facing our military forces today and for the foreseeable future are enormously diminished compared to the Soviet threat of the Cold War. To be sure, the spread of fourth-generation warfare capabilities around the globe represents an increasingly serious threat, but the forces needed to counter this threat do not require the high-cost, high-tech weapons needed for military forces configured to fight the industrial wars characterized by second- and third-generation warfare. Neverthe-

less the overwhelming bulk of the defense budget, together with the combat force structure and supporting modernization programs, continues to be devoted to conventional and nuclear forces designed to fight second- and third-generation threats. Only a small portion of the defense budget is allocated to developing, building, and training forces for fourth-generation warfare.

If one includes the defense-related expenditures of the Energy Department (mostly nuclear related, about \$12 billion per year), the United States is now budgeting about \$310 billion for defense in FY 2001. If one adds to that the defense budgets of our allies (NATO, Japan, Saudi Arabia, South Korea, Taiwan, Australia, and Israel), "friendly" defense expenditures rise by at least \$250 billion to about \$560 billion. By contrast, Russia spends about \$55 billion (probably much less), China between \$37 and \$70 billion, depending on who you believe, and the so-called states of concern (i.e., Iran, Iraq, Syria, North Korea, Libya, Cuba, Sudan, and Yugoslavia) spend a combined total of only about \$15 billion.<sup>31</sup> With differences this large, not to mention the questionable inclusion of Russia in the threat balance, it is hard to argue that an American defense budget equal to \$310 billion (or twenty times as much as the combined total of all the states of concern) represents a judicious allocation of resources to finance a two-MTW strategy of being able to simultaneously engage only two of those states of concern (the U.S. spends forty-four times as much as Iran and North Korea combined). Clearly, current levels of spending are driven more by the internal legacy of the Cold War than the external threats we face.

How might we begin to better rationalize this situation in terms of real needs?

Perhaps a couple of examples will help put this question into perspective. The first relates to the Royal Navy and the second relates to Israel. In the late nineteenth century, the Royal Navy bestrode the world's oceans like a colossus when compared to other navies, but, it should be noted, to a lesser extent than the U.S. military relates to the rest of world's conventional forces today. Strategic planners in the Royal Navy adopted what came to be known as the Two Power Standard to maintain their superiority. They used this standard to plan for the Royal Navy's budgets, particularly its battleship

modernization program. The Two Power Standard simply meant that the Royal Navy should maintain a battleship fleet that was at least as powerful as the next two biggest fleets combined, which were those of United States and Germany. Note that this standard was applied to friend as well as foe. If we applied the logic of this standard to the current U.S. defense budget, the next two biggest spenders would be Russia and Japan (about \$100 billion total) or Russia and China (about \$130 billion total), depending on whether one chose to use the low or high spending assumption for China. In other words, a Two Power Standard applied to the United States defense budget would reduce the current budget by 58 percent from \$310 billion to \$130 billion.

Another way of using the British concept of a power standard as a measure of adequacy would be to add up the largest military spenders around the world until their total equaled the current U.S. budget of \$310 billion. Using this approach, the U.S. defense budget would be tantamount to a *Ten Power Standard*. Moreover, other than Russia (a quasi ally) and China (an economic competitor), the U.S. Ten Power Standard would include only countries that are far more closely allied to the United States (Japan, Britain, France, Germany, Saudi Arabia, Italy, South Korea, and Taiwan) than was United States to Great Britain in the late nineteenth century.<sup>32</sup> With regard to the impact of friendly powers on the efficacy of the power standard as a basis for planning, readers might recall also that Britain dropped the Two Power Standard in the early twentieth century when it became clear that it could not match the buildups occurring in the United States and Germany.

A second example illustrating the judgment of how much spending is enough is the case of Israel. Israel faces direct strategic threats from Iraq and Syria but also has to consider the potential threats posed by the organized military capabilities of Jordan, Egypt, Iran, Libya, and Saudi Arabia in its strategic planning (for the purpose of illustrating this point we can neglect the additional capabilities of any other Arab countries). If Israel applied the Royal Navy's standard to the defense budgets of the above listed adversaries, we could say Israel maintains a *One-Quarter Power Standard*. Nevertheless, few doubt Israel's capability to defend itself with its conven-

tional forces in a second/third-generation war like those of 1967 or 1973 against these nations. On the other hand, Intifada I, the debacle in Lebanon, and the ongoing Intifada II (also known as the Al-Aqsa Intifada) all imply serious questions about the capability of Israel's military to defeat the threats posed by a fourth-generation adversary. But fourth-generation threats, serious as they may be, are hardly related to the relative size of Israel's defense budgets, let alone those of the United States.

Some might be tempted to argue that Israel's One-Quarter Power Standard is misleading because Israeli spending is far more efficient than that of its adversaries. That is no doubt true, but the argument is a double-edged sword because it also applies to the U.S. Ten Power Standard, in effect making the overwhelming nature of that comparison even larger when applied to a two-MTW strategy against the likes of Iraq, Iran, or North Korea.

Our military exists to cope with the real threats to our nation's security. But the bulk of U.S. spending is directed toward maintaining and modernizing its second- and third-generation military capabilities left over from the Cold War with the modern equivalent of a Ten Power Standard. Indeed, the total worldwide spending by all the second- and third-generation regional threats, none of which is large enough to be included in the Ten Power calculation, is only one-twentieth of the U.S. budget, and the two-MTW strategy used to justify current force planning is tantamount to a Forty-four Power Standard.

On the other hand, the U.S. is paying the budgetary equivalent of lip service to fourth-generation threats that are clearly becoming more prevalent and dangerous, as the Al-Aqsa Intifada shows. Taken together, the low level of second- and third-generation threat spending suggests that the range of possible budget scenarios should include lower spending options as planning scenarios as well as the higher unfunded projection in Figure 15-3. And the growing importance of fourth-generation warfare suggests that planners ought to begin allocating more effort to building a force and training people to meet these threats. The fourth-generation warfare requirement makes it necessary for the services to provide information on how the CPOs produced under the different bud-

get scenarios in Phase II conform to a taxonomy of second-, third-, and fourth-generation warfare.

### **How Much Is Enough? Accounting for the Vanishing Surplus**

The second factor shaping the selection of a range of relevant budget scenarios relates to what can be realistically afforded and justified over the long term. This factor is internal, and it derives from the long-term pressure to balance the budget while financing the increasing burden of Medicare and Social Security as well as other domestic needs like education and infrastructure.

Most Pentagon planners believe a future stream of about \$2.2 trillion in non-Social Security budget surpluses will be available between 2001 and 2010. This vision makes the prospect of substantially higher defense budgets quite likely and the possibility of lower defense budgets extremely unlikely. There are several reasons why it is wrong to let this mind-set guide defense planning.

The first point to note is that Congress must change the laws governing current spending policies (e.g., farm price supports) for the \$2.2 trillion non-Social Security surplus to materialize. If, as is more likely, Congress again refuses to repeal or change current spending laws, all but \$700 to \$720 billion of the \$2.2 trillion in projected non-Social Security surpluses will be soaked up between 2001 and 2010 by the future consequences of current policies. There is remarkable agreement between conservative and liberal budget analysts on this fundamental point.<sup>33</sup>

The second point to note is that Congress shows no sign of any intention to cut back the future consequences of current spending and taxation policies. In fact, just the opposite seems to be occurring. It appears that the spending bills and tax policies approved by Congress in the fall of 2000 could reduce the \$2.2 trillion non-Social Security surplus by about a third, or \$733 billion. If all of these bills become law (the president is threatening to veto some), then the \$700 billion that was available between 2001 and 2010 would have been wiped out before Christmas, 2000.<sup>34</sup>

Third, the CBO released a report in October 2000 analyzing the federal government's long-term budget outlook. The CBO con-

cluded policy changes to Social Security and Medicare (read changes to reduce expenditures per capita) were needed because, under current policies, "federal deficits are likely to reappear and eventually drive federal debt to unsustainable levels" once the Baby Boomers start collecting Social Security and Medicare.<sup>35</sup> Without a growing threat to justify the voracious appetite depicted in Figure 15-3, any plan based on the assumption that the Pentagon will cash in while Social Security cashes out is, to put it charitably, tantamount to a declaration of budget war.

Fourth, all estimates of future surpluses are based on rosy economic scenarios that could easily head south if, as is likely, a recession or multiple recessions intrude over the next twenty years and bring an end to the longest spurt of economic growth in U.S. history. Moreover, in the event of a recession, the Keynesian belief that pumping money into the defense budget is a viable strategy for pulling the economy out of a recession and returning it to a high growth path may no longer be valid. The longest, most vibrant growth spurt in U.S. history has also been associated with a smooth decline in the share of GDP soaked up by defense expenditures. It may be that the vigor of the expansion was in fact boosted in part by the declining drag of the defense diversion on investment, production, and consumption. If this is true, increased defense spending might be a very inefficient or even counterproductive way to stimulate the economy. No one really knows whether this in fact would be the case, but it is a subject worthy of serious study by economists and government policy makers.

Finally, there is a practical problem with increasing defense expenditures. The economy is now close to full employment, and a huge increase in the defense budget such as those depicted in Figure 15-3, would trigger an inflationary bidding war to bribe young high-tech workers to join the stagnant military-industrial backwater they now prefer to shun.

Let us now bring the threads of discussion together to identify a range of budget scenarios to guide the conduct of Phases II and III. The absurdity of maintaining a Ten Power Standard in a world made up mostly of friends, the vastly diminished nature of second- and third-generation regional threats, the rise of fourth-generation

warfare, the vanishing surplus, the looming financial crisis in supporting an aging population, and the possibility of an economic downturn all combine to suggest it would be prudent for defense planners to examine the future consequences of alternative courses of action in the context of both decreasing and increasing defense budgets.

#### How Much Is Enough? Hypothetical Budget Scenarios

The planners running QDR II have not and will not consider the contingent possibility that internal forces beyond their control might result in lower future budgets. In effect, the force structures, modernization choices, and predicted readiness states produced by QDR II will be based, once again, on the fatally flawed assumption that planners can predict the future economic constraints of the internal environment *without* error, notwithstanding the uncertainties described in the preceding subsection.

But what would happen if the vanishing threat and the growing internal economic constraints caused lower defense budgets to gradually emerge over the long term?

What will happen if the hopes and dreams portrayed in Figure 15-3 turn out to be another fantasy like the hopes and dreams of the future budgets predicted by the Reagan administration in the mid-1980s?<sup>36</sup>

The second QDR, as it is presently structured, will not be able to answer these kinds of questions for the simple reason that it will ignore this possibility.

On the other hand, QDR II will produce programmatic decisions that have profound long-term consequences, like the rising budget requirements attending its probable approval of the army's high-cost transformation strategy or the inclusion of the JSF in the Defense Department's modernization strategy. Approval of such recommendations will lock future decision makers into a rigid course of action dependent on a sharply rising procurement bow wave which, when coupled to the rising cost of operations, requires the assumption of steadily rising budgets well into the second decade of the twenty-first century. If emerging budgets turn out to be lower

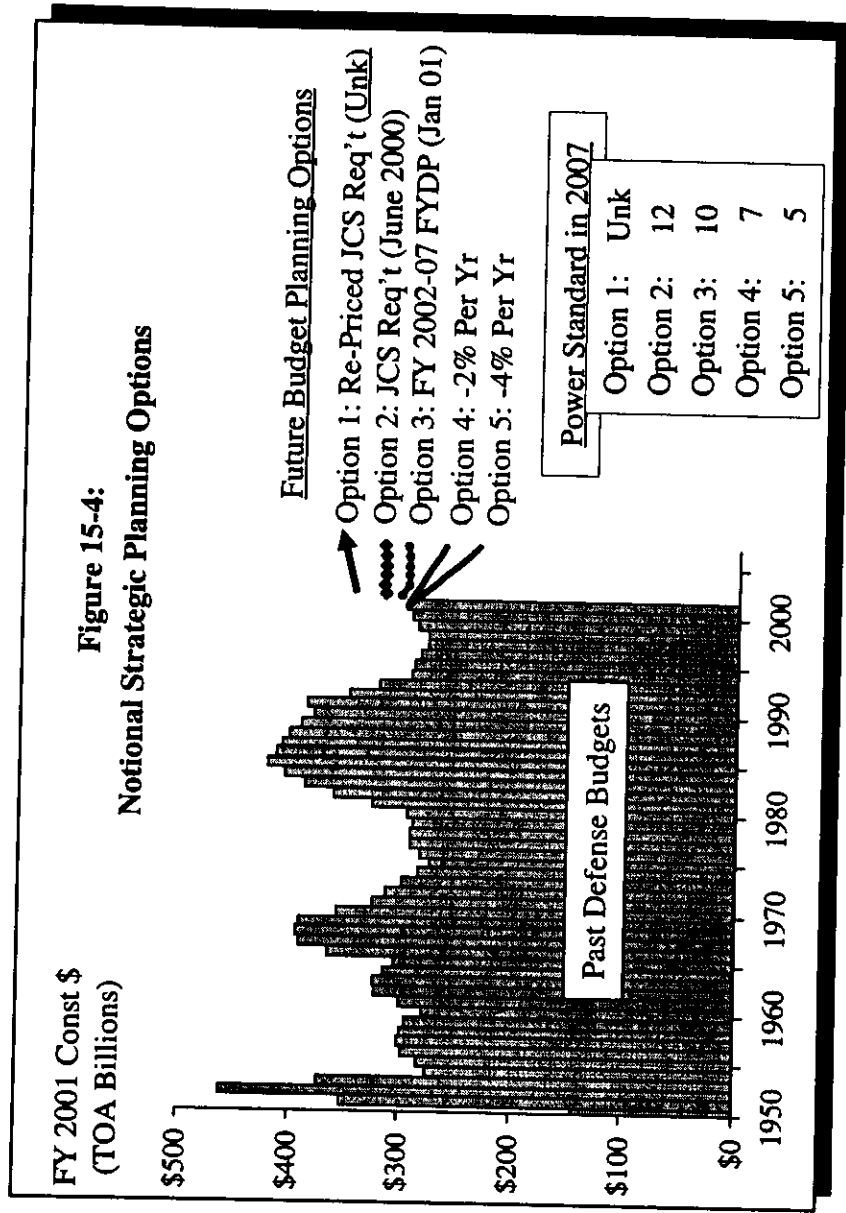
than those predicted, or if, as is likely, costs turn out to be higher than predicted, future decision makers again will be forced to scramble to make marginal adjustments in the short term. If the past is prologue, they will be forced to react to a myriad of unplanned budget pressures in the short term by repeating the destructive cycle of production stretch-outs, readiness reductions, and force structure cutbacks that led to the debacle in the late 1990s. The QDR III planners in FY 2005 will in turn criticize QDR II as being budget driven rather than strategy driven as they organize to produce another unexecutable plan.

The only way to break out of this destructive cycle is to think through the problem *before* it occurs. This requires planners to examine the impact of budget uncertainties (and cost uncertainties) before the fact. This can be done through a contingency analysis of the alternative programmatic effects attending a range of pessimistic budget scenarios as well as those attending optimistic scenarios. Once these effects are understood, planners can synthesize the mix of force options best able to cope with or adjust to the effects of the uncertainty. In so doing, planners can uncover a priority system that identifies what is truly important and what is nice to have. Under this approach, priorities are not set arbitrarily before the fact but are viewed as emergent properties discovered via an iterative trial-and-error process of combination and selection.

Figure 15-4 introduces a range of five hypothetical spending profiles for the entire Defense Department that could be used to guide the trade-offs in Phases II and III. During Phase II, the budget share allocated to each military service and defense agency would be determined by the average proportion of the total budget it received during the first decade of the post-Cold War era (1991-2000). These shares equate to 26 percent for the army, 31 percent for the navy and Marine Corps, and 30 percent for the air force, with the remainder being allocated to the various defense agencies.

Using the more reliable pricing information produced by the book-cleaning operation described in Phase I, planners would price out five options based on the overall constraints portrayed in Figure 15-4. Option 1, the "Re-JCS Req't" would be the highest option and its budget levels would be based on a repriced calculation of the





<b>Option 1</b> Re-Priced JCS	+\$ (?)	+\$ (?)	?
<b>Option 2</b> JCS \$ Req't	\$317	+\$120 (+7%)	12
<b>Option 4</b> -2% Per Year	\$264	-\$120 (-7%)	7
<b>Option 5</b> -4% Per Year	\$233	-\$233 (-13%)	5

force program contained in the FY 2002–2007 POM, together with the unfunded requirements identified by the military services in June 2000. Option 2—the Twelve Power Standard—would consist of a force package (structured together with the supporting modernization and readiness maintenance programs) constrained by the budget total of the JCS Req't (i.e., the Clinton 2002–2007 POM plus the unfunded requirements identified by the military services in June 2000). Under Option 2, the defense budget in 2007 would be 6 percent lower than the average during the forty years of Cold War. Option 3—the Ten Power Standard—would consist of the force package constrained by the January 2000 FYDP totals identified by the departing Clinton Administration, which approximate 0 percent real growth or a constant dollar budget freeze. Note that this total reflects a last minute addition of \$53 billion to the POM totals between 2002 and 2007. By 2007, the defense budget would be 12 percent lower than the Cold War average. Options 4 and 5, the 7 and 5 power standards respectively—would be force packages constrained by 2 and 4 percent decline in the budget per year between 2002 and 2007. By 2007, the budgets produced under these scenarios would be 21 and 31 percent lower than the Cold

War average. Table 15-2 lays out the budget end state for each scenario and the difference in six-year spending totals vis-à-vis the FY 2002-2007 FYDP totals identified by the Clinton Administration just before it left town in late January 2001.

### Phase III: The Construction of Strategic Planning Options

This phase operates according to the following principle: What is best for the individual military service may not be best for the Defense Department or the nation. The aim of Phase III is to synthesize the parochial priorities of the CPOs produced by each service in Phase II into a coherent system of national defense priorities that reflects and exploits the changed conditions of the post-Cold War era. This task is the responsibility of the Joint Chiefs of Staff (JCS) and the Office of the Secretary of Defense (OSD). In Phase III, JCS and OSD would combine the CPOs produced by the military services in Phase II into a comprehensive set of DoD Strategic Planning Options (SPOs) covering the five budget scenarios portrayed previously.

The fifteen force CPOs (five from each service) produced in Phase II, plus those of the defense agencies, including their net assessments, provide the microscopic information needed for a true policy-level decision-making process. Like their service counterparts in Phase II, JCS and OSD planners would use a *combination and selection* process to continuously maximize the strengths and minimize the weaknesses of the total force while conforming to the macroscopic budget constraints of each scenario. In this way, they would systematically explore the marginal effects of different macroscopic combinations. Creative trade-offs among the variety of individual force packages might reveal interesting new macroscopic possibilities. The most effective Option 2 DoD SPO, for example, might combine an Option 5 air force package with an Option 1 navy/Marine Corps package and an Option 3 army package.

Perhaps a hypothetical example of this JCS/OSD SPO will make the idea more concrete: Table 15-2 shows that Option 4 would reduce the DoD budget to \$264 billion in constant FY 2001 dollars until 2007. Under the restrictions of this constraint, strategic plan-

ners might choose to spend far less on the air force (an Option 5 CPO). They might do this by transferring a large percentage of its forces to the reserves, which are noted for their excellence, and closing a large number of bases, thus preserving its combat power for a mobilization/reinforcement scenario. They might also choose to reduce the army's budget to an Option 5 CPO by eliminating some active forces and transforming its active/reserve divisional structure into a much smaller and leaner force based on heavy-, light-, and medium-weight battle groups. Such a force would be more deployable in the short term, but would preserve the balance of a large continental army should we need to expand it sometime in the future. These reductions would allow planners to fund the more expensive, repriced Navy/Marine Corps Option 2 CPO while conforming to the tighter constraints of the Option 4 budget projection.

Planners might argue that this hypothetical Option 4 SPO adapts the military to the realities of the post-Cold War era. It returns the United States to its traditional military posture, based on intervention, as opposed to forward basing, because it:

1. Reduces the budget
2. Maintains the expeditionary capabilities needed to protect our historical interests in the world's littorals, with the navy and Marine Corps being the rapid-deployment option, reinforced by the more mobile army battle groups and mobilized air force reserves
3. Retains a capability to field the heavy air/ground combat power needed to offset any major power imbalances in Europe or East Asia, should the need reemerge sometime in the future. The supporting modernization programs, nuclear forces, and programs in the independent defense agencies would also be tailored to fit the world conditions implied by this strategic choice

The information produced in Phase II would permit the exploration of such trade-offs by JCS and OSD planners as they search for and evolve truly national priorities out of the parochial priorities of

each service. The JCS and OSD would conclude their efforts by producing a macroscopic net assessment for each preferred DoD SPO. This net assessment would include the assumptions and trade-offs made, an analysis of its deficiencies and limitations, its impact on national security in terms of achieving goals and neutralizing threats (categorized as described earlier), and the best military strategy for working around its limitations. The final report, when approved by the president, would be a comprehensive strategy coupled to the skeleton of a new FYDP, complete with global priorities and preplanned hedging options to cope with uncertainty.

The systematic combination and selection process at the different levels of organization would provide the ingredients of a seamless information system that permits decision makers to shift their focus back and forth among the microscopic and macroscopic levels of organization. This capability would reveal the true cost of a *microscopic* decision by forcing an examination of its *macroscopic* consequences prior to making commitments. If, for example, air force planners insisted on buying more B-2s in each CPO, JCS and OSD planners would have to eliminate more and more other programs—such as F-22 fighters, carrier battle groups, or army divisions—as they moved toward lower budget levels in formulating their SPOs. These trade-offs, coupled with excursions into the consequences of cost growth, would reveal the point at which the cost of the B-2 becomes prohibitive in terms of the incommensurable sacrifices made elsewhere. In this way, the reciprocal explorations of these microscopic and macroscopic uncertainties would enable planners to anticipate problems, tease out options, evolve priorities, and perhaps do things differently.

Faultfinders will be tempted to argue that the Phase I program freeze will create chaos. This criticism is patently absurd. The defense program is already in chaos, and the banality of the QDR I fiasco and the sterility of the emerging QDR II prove that business as usual does not pass muster. More important, the Defense Department's bookkeeping mess mocks the principle of accountability, and by extension, the Constitution we have sworn to defend. Fixing the books and making our decisions transparent and understandable to the American people is a patriotic duty.

Others may argue that threats should drive strategy, but this proposal has budgets driving strategy. This linear babble ignores the nonlinear nature of strategy, not to mention the changed conditions of the post-Cold War era. In the real world, actions to neutralize threats and the constraints limiting those actions continuously interact with and fold back on each other. This proposal enables planners to shape a real strategy precisely because it is designed to explore the coevolving interplay of threats, events, opportunities, internal structures, and constraints.

Some may fear that even thinking about lower defense budgets will create a self-fulfilling prophecy by opening the door to opportunistic budget cutting by an irresponsible OSD or Congress. This argument plays well in Washington's mendacious atmosphere, but it must be rejected for logical as well as moral reasons: To say that the Pentagon should continue producing irresponsible plans because acting responsibly will provoke OSD or Congress into acting irresponsibly leads to the conclusion that we should deliberately misrepresent our needs. In other words, we are even justified in committing a crime—lying to Congress—because we are morally superior.

Strategy is not a game. It is the art of the possible in a world where changing threats and constraints force us to choose between unpleasant or imperfect alternatives. The aim of any strategy should be to continuously improve our capacity to shape and adapt to these changes. To do this, we must continually strive to improve the "fit" of our plans to reality today while preserving or increasing our fitness to cope with unpredictable changes in the future. If we want meaningful strategic priorities, we must understand the trade-offs they imply *before* we make rigid commitments that lock us into a long-term, nonadaptive course of action. Who knows, with a little accountability, perhaps the Pentagon can learn to think before it spends. That might help the president and Congress adapt our military forces to the end of the Cold War, balance the budget by 2002, avoid a budget war with Social Security and Medicare, and preserve the integrity of the Constitution.

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## Notes

1. The current military strategy calls for a capability to fight two MTWs simultaneously and to support peace operations. In theory, this goal determines the size, composition, and readiness goals for defense planners. The two-MTW standard was initially defined in the immediate aftermath of the Cold War by the Bush administration. The Department of Defense justified the so-called Base Force as the minimum force required to accomplish these goals (see Gen. Colin L. Powell, chairman of the Joint Chiefs of Staff, "The Base Force—A Total Force" [briefing presented to the Subcommittee on Defense of the House Committee on Appropriations, 25 September 1991]). But the new standard had no effect on shaping the content of the force structure or the Cold War modernization program other than to justify a smaller version of that program.

2. The 1993 Bottom-Up Review was the Clinton administration's first adjustment to the Base Force. It retained the two-MTW standard of the Base Force by simply mashing the forces and reducing the rate of modernization without appreciably changing their content (see Secretary of Defense Les Aspin, *Report on the Bottom-Up Review*, October 1993). So the cumulative "shaping effect" of the change in strategy was boiled into a justification for reducing force structure size while protecting the programmatic status quo of the high-cost, Cold War-inspired, modernization program, albeit at reduced production rates.

3. Rowan Scarborough, "Army Colonels Reject Choice Assignments," *Washington Times*, 1 November 2000, p. 1.

4. Many of these news reports and analyses of them are archived at [http://www.d-n-i.net/FCS\\_Folder/people.htm](http://www.d-n-i.net/FCS_Folder/people.htm) and its companion site: <http://www.infowar.com/iwftp/cspinney/cspinney.shtml>.

5. For more information on the growing wedge of mistrust see, the "Chief of Staff of the Army's Leadership Survey, A Command and General Staff College Survey of 760 Mid-career Students (Majors with a Few LTCs)," as well as the other commentaries at [http://www.d-n-i.net/FCS\\_Folder/leadership\\_comments.htm](http://www.d-n-i.net/FCS_Folder/leadership_comments.htm). A recent survey of all services by the Center of Strategic and International Studies found that only 36 percent of those surveyed in all

services thought there was an atmosphere of trust between leaders and their subordinates. See Elaine Donnelly, "The Credibility Crisis," *Proceedings* (August 2000), vol. 1, issue 8, p. 4.

6. David Moniz reported that the army will ask for an increase of 15,000 to 40,000 more people, the air force an increase of 10,000, and the Marine Corps will ask for an increase, but has not yet determined the number. (David Moniz, "Military: Global Demands Have Increased," *USA Today*, 26 September 2000.)

7. The recent war in Kosovo revealed the flaws associated with the RMA theory that we can track everything on a battlefield from afar. It is now clear that we could not keep track of the Serbian forces operating against the Albanians. In fact, the total number of tanks, armored personnel carriers (APCs), and artillery pieces killed in the NATO air campaign was miniscule (fourteen tanks, twelve APCs, twelve self-propelled guns, and six towed artillery pieces (see Elaine Grossman, "Air Force General Used Low Kosovo Damage Count as Starting Point," *Inside the Pentagon*, 11 May 2000, p. 1). Although the air force takes exception to Grossman's numbers, the supreme allied commander, Gen. Wesley Clark, essentially confirmed them in his 16 September 1999 Kosovo strike assessment, which is available on the Internet. Note that the thin yellow lines in the bars of slide thirty-seven are consistent with the general level of Grossman's numbers. Slide thirty-seven can be found at <http://www.nato.int/pictures/1999/990916/b990916zk.jpg>. Moreover, Grossman's report of the breakdown of targeting policy during the bombing campaign, as exemplified by the wildly proliferating number of targets, as well as the mindless goal of building toward two thousand targets, combine to suggest a general loss of situational awareness that is completely at odds with the tenets of the RMA theory (see Elaine Grossman, "U.S. Military Debates Link Between Kosovo Air War, Stated Objectives," *Inside the Pentagon*, 20 April 2000, p. 1). The lack of results was also evident when the Serbian army pulled out of Kosovo in June 1999. It had suffered hardly at all and its troops were well fed and in high spirits. The NATO claims of the destruction of hundreds of tanks and artillery pieces turned out to be wildly inflated. We can expect future opponents to build on the Serb experience as a means of avoiding the firepower-intensive "American Way of War."

8. Franklin C. Spinney, "Defense Time Bomb: F-22/JSF Case Study & Hypothetical Escape Option," *Challenge: The Magazine of Economic Affairs*, July–August 1996, available at [http://www.infowar.com/mil\\_c4i/defense.html-ssi](http://www.infowar.com/mil_c4i/defense.html-ssi).

9. Franklin C. Spinney, "Porkbarrels and Budgeteers: What Went Wrong with the Quadrennial Defense Review," *Strategic Review*, vol. 7 issue 3 (fall, 1997), p. 33.

10. Associated Press, "GAO: Pentagon Books Not in Sync," 5:57 p.m. EDT, 30 April 1997.

11. Office of the Inspector General, *Internal Controls and Compliance with Laws and Regulations for the Defense Business Operations Fund Consolidated Financial Statements for FY 1995*, Report no. 96-178 (Washington, D.C.: Department of Defense, 26 July 1996).

12. Office of the Inspector General, *Major Deficiencies Preventing Auditors from Rendering Audit Opinions on the FY 1995 DoD General Fund Financial Statements*, Report no. 97-026 (Washington, D.C.: Department of Defense, 19 November 1996), pp. i–ii, 2.

13. John Donnelly, "Auditors Seek 'Lost World' of Miscalculated Billions," *Defense Week*, 28 April 1997, p. 1. Emphasis added.

14. The following web site has links to the most recent IG report as well as related audits released by the GAO: [http://www.d-n-i.net/FCS\\_Folder/budget.htm](http://www.d-n-i.net/FCS_Folder/budget.htm).

15. General Accounting Office (GAO/NSIAD-96-152R), 30 April 1996, a report sent to Senators Grassley and Roth, in possession of the author.

16. A more detailed explanation of the Defense Power Games can be found at [http://www.d-n-i.net/FCS\\_Folder/power\\_games.htm](http://www.d-n-i.net/FCS_Folder/power_games.htm).

17. A more detailed discussion of the constitutional issues can be found at [http://www.d-n-i.net/FCS\\_Folder/constitutionality.htm](http://www.d-n-i.net/FCS_Folder/constitutionality.htm).

18. Examples of failed strategic reviews include "PRM-10" during the Carter administration, the "National Strategy Review" and "Base Force" during the Bush administration, and the "Bottom-Up Review" at the beginning of the Clinton administration. The fact that special reviews are deemed necessary ought to raise a question, because the Defense Department's Planning, Programming, and Bud-

geting System (PPBS) is structured exactly like this logic chain and has been the central strategic planning methodology since the early 1960s. If this logic worked in the real world, periodic strategic reviews would not be necessary.

19. Students of cybernetics and complexity theory will recognize the characteristics of a complex adaptive process are central to this view of strategy. This implies the phenomenon of self-organization and unpredictability.

20. How to commensurate the incommensurable is the key problem we face. If everything could be reduced to interchangeable measures of performance, choices between options would be easy. But the real world is not like that. The problem is one of making trade-offs between alternatives that do not have common denominators that can be measured directly. If one is choosing between two heavy divisions and a B-2 bomber, there is no common element to guide the choice other than money, which measures input and not output. The best (or least bad) choice depends on subtle indirect effects. The only decision-making process we know in nature that makes these kinds of choices effectively is natural selection. The process outlined in this subsection can be thought of as a kind of artificial natural-selection process driven by a predefinition of selection pressures that might occur. The best discussion of the philosophical nature of this problem, I believe, is Garret Hardin's "The Tragedy of the Commons," *Science* 162 (March 1968): pp. 1243–48, also available at <http://www.dieoff.org/page95.htm>.

21. James P. Stevenson has written a book describing this debacle that will be published by the Naval Institute Press in 2001.

22. A compendium of writings on this subject can be found at [http://www.d-n-i.net/FCS\\_Folder/fourth\\_generation\\_warfare.htm](http://www.d-n-i.net/FCS_Folder/fourth_generation_warfare.htm).

23. Information describing how the defense power games work and what their destructive consequences are can be found at [http://www.d-n-i.net/FCS\\_Folder/power\\_games.htm](http://www.d-n-i.net/FCS_Folder/power_games.htm).

24. The POM was the first draft of each service's contribution to the FY 2002–2007 FYDP. The secretary of defense tells each service how much money it can spend over the next year and the services are supposed to build the POMs to that funding level. In effect, the

chiefs told the defense secretary that the budget guidance allocated to them for planning purposes was too small by \$180 billion and there were crucial programs for which they could not pay.

25. Thomas E. Ricks and Roberto Suro, "Military Budget Maneuvers Target Next President," *Washington Post*, 5 June 2000, p. 1.

26. Those advocating the 4 Percent Solution included Frank Gaffney, president of the Center for Security Policy, a national security think tank (Frank J. Gaffney Jr., "The 'Four Percent Solution' for Military Readiness," *San Diego Union Tribune*, 13 August 2000); Gen. James Jones, commandant of the Marine Corps (Hunter Keeter, "Marine Commandant Calls for Defense Spending Increase," *Defense Daily*, 16 August 2000, p. 6.); and Adm. Jay Johnson, recently retired chief of naval operations (Tom Stuckey, "Fleet Strength at Risk, Retiring Admiral Says," *Washington Times*, 23 July 2000, p. C-13), and a resolution passed by the Air Force Association in September ("Global Vigilance, Reach, and Power," Air Force Association 2001 Statement of Policy, 10 September 2000, <http://www.afa.org/library/policy/pol2k1.html>). In 1998, Gen. Gordon Sullivan, a former army chief of staff, also made this proposal (Gordon R. Sullivan, "Increased Global Engagement Makes Greater Investment in Military Vital," *Tacoma News Tribune*, 18 August 1998). See also RAdm. Jeremy D. Taylor USN (Ret.), "Defense Spending: Alarm Bells Are Sounding: Is Anybody Listening?" *Ogden (Utah) Standard-Examiner*, 8 October 2000. The common denominator in all these calls is that no one said how much 4 percent of the GDP would amount to or how it would compare with past budgets.

27. John J. Lumpkin, "Military Doctrine Tackled: Two-War Principle May Be Examined, Senators Say," *Albuquerque Journal*, 25 October 2000. This report summarizes the results of a report submitted on 24 September to the Senate Budget Committee by Daniel L. Crippen, the CBO director. That report, "Budgeting for Defense: Maintaining Today's Forces," can be found at <http://www.cbo.gov/showdoc.cfm?index=2399&sequence=0&from=7>.

28. Reuters News Agency, "Official: Military Budget Needs Extra \$100 Billion," *Washington Times*, 27 October 2000.

29. The constitutional implications of the broken bookkeeping system are discussed in a number of the hot links at [http://www.d-n-i.net/FCS\\_Folder/constitutionality.htm](http://www.d-n-i.net/FCS_Folder/constitutionality.htm).

30. A graphical portrayal of how forces changed over time can be found at [http://www.d-n-i.net/FCS\\_Folder/rising\\_cost\\_of\\_operations.htm](http://www.d-n-i.net/FCS_Folder/rising_cost_of_operations.htm).

31. The most reliable source of world military expenditures is *The Military Balance*, published each year by the International Institute for Strategic Studies (IISS). Most of the data used in this section comes from this source, with the exception of Chinese estimates published by the State Department.

32. *Ibid.* Where there is great uncertainty in spending levels (China, for example), the highest estimate was substituted for the IISS estimates. This methodology errs on the side of understatement because it has the effect of *reducing* the disparity between world spending levels and U.S. spending levels.

33. There is surprising unanimity among liberal and conservative budget analysts on the size of the shrinking surplus: For a liberal view of the shrinking surplus, go to the analysis by the Center on Policy and Budget Priorities at <http://www.cbpp.org/7-18-00bud.htm>. For a conservative perspective on the shrinkage, go to the analysis by the Concord Coalition at [http://www.concordcoalition.org/federal\\_budget/001011issuebrief.htm](http://www.concordcoalition.org/federal_budget/001011issuebrief.htm).

34. "Say Goodbye to the Surplus," *Washington Post*, 26 October 2000, p. A36. As of this writing, President Clinton had threatened to veto the tax bill, but had not done so. Whether or not the veto takes place, the central point remains the same: The future surplus is being chewed up by incremental congressional action, so much of it will be unavailable to finance long-term defense budget increases.

35. Congressional Budget Office, "The Long Term Budget Outlook," October 2000, available at <http://www.cbo.gov/showdoc.cfm?index=2517&sequence=0&from=7>.

36. A chart comparing past FYDPs to actual appropriations by Congress can be found at [http://www.d-n-i.net/FCS\\_Folder/4percent\\_solution\\_current\\_dol.htm](http://www.d-n-i.net/FCS_Folder/4percent_solution_current_dol.htm). The lines depict all the FYDPs produced since 1961. These plans can be thought of as the Pentagon's

hopes and dreams. The bars predict actual appropriation since 1951; they can be thought of as a portrayal of reality. Taken together, the result is a comparison of plans to reality, and any divergence between the lines and the bars is a mismatch between plans and reality. Readers should note that this chart is portrayed in current dollars, meaning the effects of inflation are included. Data limitations make it impossible to remove the effects of inflation from the plans over the entire range of data, so the only way to make an apples vs. apples comparison is to include the effects of inflation. There are also theoretical reasons for including inflation: Current dollars are what are actually appropriated and spent. Inflation adjustments, particularly when made for future inflation assumed in plans (which may or may not occur) are an artificial contrivance. In this case, discounting for inflation has no effect on the pattern of the mismatch. Bear in mind that the mismatch between plans and reality in the mid-1980s occurred during a rapid collapse of inflation, so the same pattern of mismatches would be exhibited in an inflation-adjusted chart for this period.