More for Less? The Limits of
Defense Reform and Military Transformation

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The problem set that reform and transformation efforts were meant to address during the 1990s comprised both long-standing issues and some new ones introduced by the process of post-Cold War force reduction.

Among the long-standing and broadly recognized problems were:

■ Difficulties in integrating the efforts of the individual services and removing unnecessary redundancies in both combat and support functions;

■ Streamlining the armed services support and maintenance systems, generally, and "right-sizing" the defense infrastructure, including the military base system;

■ DoD's chaotic financial management and accounting system, which renders audits virtually impossible and, thus, opens the door to waste (or worse), while impairing accurate cost analysis and good planning; and

■ DoD's dysfunctional equipment acquisition process, which GAO scores as routinely delivering systems that "involve higher costs, later fielding than planned, and less performance than expected."{1}

In addition to these long-standing problems, the process of reducing the size of America's military itself introduced new efficiency problems.

■ With the reduction in force size, acquisition and support systems that had evolved to serve a larger military lost some economy of scale, making everything more expensive *per unit*. Recovering (or improving on) that economy requires extensive restructuring.

■ A similar problem concerns the complexity of the US armed forces, generally. If the full complexity of the military were retained, while its size reduced, "field units" (such as combat battalions, air squadrons, and naval combatants) would suffer disproportionate cuts.

A costly complexity

The US military is an organization of incomparable complexity, larger in size than IBM, GM, Ford, GE, and Bank of America combined. Apart from the four services – five including the Coast Guard – and six reserve components, it maintains 50 major commands either one step above or below the service level. Each service maintains a variety of combat arms in addition to support units. For instance, the US Navy's "arms" include surface combatants of several types, aircraft carriers, carrier aviation, amphibious warfare capabilities, mine warfare aircraft and ships, special operations units, and nuclear attack, hunter-killer, and conventional land-attack submarines.

A thorough accounting of the US military's complexity might measure it in terms of the number and variety of its:

- Functions or "mission portfolios",
- Constituent arms, and
- "Command spheres" – some geographical (CENTCOM), some functional (STRATCOM), but all serving to define the military's scope of action.

All of these represent facets of power. And each requires some specialized fixed investment (staff, infrastructure, support).   The fact of this fixed investment means that cuts weigh disproportionately on the most variable elements of the force structure: field units and combatants, which can be easily sliced away or hollowed out.

A "bottom up" reform might seek to re-engineer the whole enterprise, adapting its way of doing business to a smaller size.   However, as it turns out, the path of change actually chosen was to retain complexity, implement personnel reductions, and increase the level of outsourced activities. This partly compensated for lost efficiency and made it possible to keep more personnel in the deployable and combat components of the force than would have otherwise been the case. This is tantamount to retaining or increasing the military's *de facto* size, but with more of the support functions sitting outside DoD in private hands.

This option trades a reduction in personnel expenditures for an increase in contract expenditures (which would manifest mostly as a rise in O&M costs). There is a potential for financial savings by this path insofar as the cost to DoD for non-DoD labor is usually less than the cost of in-house labor, whether military or civilian. But much depends on how carefully contracts are negotiated and managed -- and on how much is demanded of the services. The higher the level of expected readiness, overseas engagement, and operational activities, the more likely it is that O&M costs will rise to vacate any hoped for peace dividend.

The prospects for reform

The end of the Cold War created an opportunity for the deep structural reform of America's military – potentially comparable to that achieved after the Second World War. Restructuring was necessary due to planned force reductions and the desire to extract a "peace dividend". However, achieving these ends depended on national leadership exercising sufficient political will to overcome considerable inertia within America's most respected institution: its military.

It is not that the DoD and armed forces lack in-house reformers and visionaries.{2} They are present, often celebrated, but also often either marginalized or "niched" in reform vestibules, such as the Office of Force Transformation (which was closed in August 2006, after nearly five years of operation).{3} Even when reformers rise to the top, reform itself faces a hard slog. The US military's quasi-feudalistic structure can dissipate reform impulses as easily as a good shock absorber dissipates bumps. More effective at prompting the institution to reform itself are the exigencies of war or the shock of defeat. But the Pentagon emerged from the Cold War (and from the Gulf War soon after) as a victor.

Certainly, options for change were not lacking at the Cold War's end. In addition to broad and persistent concerns about the acquisition process, financial management, and the logistics system, reformers outside and inside the military variously proposed:

- Trimming the redundancy in US Army and Marine Corps missions, Navy and Coast Guard missions, and in the fixed-wing capabilities of the Air Force, Navy, Marine Corps, and Army;

- Dramatically reducing the role of naval aircraft carriers and attack submarines;

- Retiring one or even two of the legs of the nuclear triad;

- Investing more authority in the Joint Staff, Chairman of the Joint Chiefs, and joint structures generally;

- Integrating planning, acquisition and budgeting efforts at the joint level;

- Adopting "flatter" information-age organizational structures and reducing staff at all levels;

- Consolidating the individual services' maintenance depots and systems, basic and flight training programs, commissary and family services, and medical, legal, and chaplain services, as well as some bases and service schools;

- Reducing excess capacity in depots (50%), labs (35%), and testing facilities (50%);

- Reducing excess base infrastructure (~40%);

- Streamlining the intelligence establishment;

- Outsourcing a wide variety of support activities; and

- Privatizing military housing and utilities.

Downsizing reform

The end of hope for deep structural reform came near the beginning of the process, however, when the 1994-1995 Commission on the Roles and Missions of the Armed Forces (CORM) chose a path of low resistance, declaring inter-service rivalry and redundancy to be mostly "non-issues".{4} Col. Richard Lacquement, Director of Military Strategy at the US Army War College, summarizes the impact of the CORM report in rather blunt terms:

> The services successfully resisted changes to their roles and missions. The commission produced no major recommendations for changes in the military services but did present a shotgun blast of minor recommendations..."{5}

The Commission suggested some changes to the military's command structure, endorsed efforts to improve jointness, and otherwise pointed to infrastructure cuts as a source of savings. Several reports from Defense Science Board task forces subsequently suggested that outsourcing and privatization might be the source of considerable savings. But here, too, progress was slow and modest. As Cindy Williams, a research scientist at MIT's Security Studies Program and a former Assistant Director of the Congressional Budget Office, has observed,

> The 1990s opened with impressive measures to downsize and streamline military infrastructure …… But, inside the Pentagon, the vision for achieving infrastructure savings became increasingly limited: seek Congressional support for closing more bases; reduce the number of personnel at service and command headquarters and in organizations that report directly to the Secretary of Defense; pursue more public-private competitions, conduct limited internal consolidations; and eke out whatever savings are possible from adopting business practices that have become common outside government.{6}

The Government Accountability Office points to competitive (out)sourcing efforts and military base reductions as the initiatives that probably have saved the most money. Although DoD has sought to open 240,000 existing military and DoD civilian positions to outside competition, the actual number of positions competed so far is much less. At any rate, once completed, the process is not likely to produce annual savings exceeding $3 billion (2010), if that.{7}

As for base closures: The first four BRAC rounds – 1988, 1991, 1993, and 1995 – reduced infrastructure by about 20% and have produced annual savings of about $7 billion. The fifth round, now underway, may close as much again, but produce savings of only $3.9 billion according to the GAO.{8}

In sum, the two most fruitful of current reform efforts will probably not produce reliable annual savings exceeding $14 billion (2010) – once enactment costs have been fully paid.

Acquisition, logistics, and financial management reform

In the 13 years since the Clinton administration first launched a coordinated defense reform effort, the GAO has routinely noted the slow pace of progress in the pivotal areas of financial management, acquisition reform, and logistics.{9} Regarding shortfalls in DoD's management of its finances, the acting US Comptroller General, Gene Dodaro, recently noted that:

> While DoD represents a big share of the federal budget, it is one of the few federal entities that cannot accurately account for its spending or assets. It is one of only 3 entities in the entire government that cannot pass the test of an independent audit.{10}

The implications of this failure for planning and budgeting are clear in the assessment of Kwai Chan, a former lead analysts with the GAO: "DoD does not know what it owns, where its inventory is located, and how its annual budget is being spent."{11}

Regarding logistics problems, there recently has been some notable progress in speeding the delivery of critical items to theaters of war, but the larger problems of excess inventory, poor inventory control, and weak coordination among DoD's multiple logistics systems persists.{12}

This implies little progress since the Defense Science Board reported in 2006 on "the failure of DoD improvement strategies to date, which have been primarily focused on incremental improvement within traditionally-defined logistics structures and organizations."{13}

Turning to the equipment acquisition process: The number of programs showing one or more of the characteristic problems – over budget, late in delivery, less capability than expected – has steadily risen through 2007, showing only marginal improvement in 2008.{14} GAO points to multiple flaws in the acquisition process: cost and performance estimates are unrealistic from the start; programs depend on immature technologies; programs proceed on the basis of inadequate standards and testing; and program risks are inappropriately allocated between manufacturers and taxpayers. Nonetheless, the process persists – in part, because it resonates with a deep faith in technological fixes and, in part, because it serves a variety of parochial interests. Of course, this does not absolve failures of leadership, as Anthony Cordesman points out:

> The Department of Defense has been locked into a "liar's contest" at the level of defense contractors, program managers, every military service, and the Office of the Secretary of Defense where no one is really held accountable.... There are many ways in which the US might create better procurement experts, better program managers, and more efficient procedures. The level of failure in today's programs, however, represents a basic failure to make hard choices at the level of the Secretary of Defense, Deputy Secretary, Service Secretaries, Chairman of the Joint Chiefs, and Service Chiefs of Staff. None of these problems could arise without a broad abdication of leadership responsibility throughout the Department.{15}

Defense Secretary Gates and the Obama administration have promised to vigorously renew reform efforts in this area and Congress has responded with the Levin-McCain Weapons Systems Acquisition Reform Act of 2009. Of course, this is not the first renewal of the reform impulse since 1997; former Secretary Rumsfeld also had vowed to take on the dysfunctional acquisition process, lopping off the Army's Crusader artillery system and Comanche helicopter program along the way.{16} The relevant question is: Will this latest renaissance accomplish more than swapping out a few disfavored systems for a few favored ones? "Reprogramming" efforts often employ the banner of reform.

The difficulty of reform reflects the fact that the problems at issue go to the heart of governance dynamics in the defense area. In some respects, the system is a quasi-feudalistic one governed by a relatively weak center, and there is an imbalance between civilian and military authority, between joint and service authority, and between public and special interests. The functioning of the system normally depends on largesse and on a fair amount of deference to "subordinate" offices. Political authorities might challenge and alter this configuration, but that would require a broad and risky political mobilization.

In the defense establishment as presently constituted, "hard choices" are not just "hard", they are disruptive to the functioning of the system. All the players know it and usually act accordingly. In a penetrating analysis, the US Commission on National Security (Hart-Rudman Commission) observed in 2001 that DoD had no idea of the real costs associated with its various core missions and activities, which would seem to make good planning and rational choice impossible. In most enterprises, this might precipitate reform, but not here:

> Every business wants to know what it costs to accomplish a task, produce a product, or provide a service—but DoD deliberately chooses not to know. {17}

The thermidor in military affairs

Although not part of the defense reform agenda, *per se,* the prospect of achieving a technology-based "revolution in military affairs" (RMA) contributed to hopes that the post-Cold War US military might be able to do "more for less." The central conceit of RMA thinkers was that – given the employment of appropriate technology, organization, and methods – *information* might serve to partially substitute for *mass* in the functioning of military forces.{18} By reducing uncertainty, information would lessen the need for redundancy. Greater precision in the delivery of firepower, in the movement and coordination of assets, and in the provisioning of units would allow less to do more – or, a similar sized force to do *much more*.

The fullest realization of the RMA vision would be a military with assets and units fully "networked" within and across services.{19} In this way, the vision complements and depends on advances in "jointness". As noted in the main section of this report, the putative network would comprise three levels – information collection, strike, and support – and these would be fused by joint communications and information processing capabilities. Ideally, this would serve efficiency by reducing the resort to redundant capabilities:

- Capabilities would be distributed among cooperating platforms, alleviating the tendency to overload individual platforms with capabilities (and costs).

- Capabilities would be shared (or fused) across services. Thus, for instance, various sources of firepower – fixed-wing aircraft, helicopters, artillery, UAVs, cruise-missile submarines, missile-bearing surface ships – would become fungible. All would become available to all. And,

- The tendency for logistics stores to accumulate at multiple (and often opaque) sites stretching from the continental United States to forward operating areas would be relieved.

These promises have gone substantially unfulfilled, however. Partly, this reflects the uneven and slow progress in creating the foundation for the envisioned "network-centric" force. Here, the problems are of both the engineering and bureaucratic variety. The limits were evident in the first phase of *Operation Iraqi Freedom,* which some had hailed as marking the advent of network-centric warfare. Admiral Cebrowski, then head of the Office of Force Transformation, gave a more modest appraisal, however, concluding that the operation evinced "network-centric warfare for the joint task force commander" only.{20}

Linkages had been established among higher-level headquarters that could support much better data-sharing and real-time interaction among staff. But the "network" had substantial problems getting useful information and support to tactical units in a timely fashion, leading field commanders to complain of a "digital divide" and Cebrowski to cite a "pronounced weakness in connectivity at the tactical level."{21} In fact, tactical commanders found themselves overburdened with disparate communications gear and -- when available bandwidth would allow data to flow -- glutted with data (which, importantly, is not the same as "information").

In testimony before Congress, the Army forces commander, Lt. General William Wallace, complained of incompatible communications systems, insufficient bandwidth, network unreliability, and poor dissemination of intelligence.{22} Blockages in joint support systems of various types -- intelligence, logistics -- led the services to mostly rely on their own stovepipes and led tactical units to depend on organic assets.{23}

Moving and tracking material to the theater went much better than it had in Desert Storm, making it possible to send less. However, efforts to then move the material forward to tactical units often came up short -- especially when those units were on-the-move. This prompted numerous and frequent complaints from battalion- and company-level commanders. Structurally, logistics systems remain fragmented.

One area of operations that has shown greater progress is aerial reconnaissance and strike, mostly involving Air Force assets. Capacities for standoff attack with guided weapons have increased dramatically since 1990 and reaction times have been shortened. Also noteworthy is the integration of special forces in the targeting cycle and the much increased use of UAVs in reconnaissance and strike roles. Advances of this sort have inspired "net-centric" thinking since the first Gulf War. But they hardly represent what has been accomplished overall. Indeed, they suggest a much narrower type of network: what the Soviets used to call a "reconnaissance-fire complex."

At heart, network-centric warfare depends on the emergence of a common nervous system among the services. What presently exists, however, is a wide variety of service-centric and often incompatible command, control, communications, computation, and intelligence (C4I) systems – some of which are cludged together on the eve of war to enable better joint staff work. Certainly, at all levels, war compels greater inter-service cooperation. But when that comes up short – as it often does – the services are quick to fall back on their individual devices. The larger reality is that the simplest, most essential thing -- getting the services to buy and use compatible radios and communication protocols -- remains deeply conflicted.{24}

In a 1997 article, Kenneth Allard reflected on the structural impediments to transforming C4I along joint lines, suggesting that "separately organized military services always put their own needs first and joint concerns second – especially when building command and control systems."{25} At issue is not simply cooperation in the field, but cooperation in designing and building a common nervous system (or, at least, compatible nervous systems), within and between services. Strong leadership and resourcing from the center are essential, but as the 2004 Joint Defense Capabilities Study found: In the development of joint warfighting capabilities, the individual services are still in the lead and "'jointness' is forced into the program late in the process."{26}

Looking specifically at the development of joint command and control capabilities, a 2005 Defense Science Board study concluded that DoD "and its subordinate entities have not articulated a general way forward... especially to address tactical needs."{27} Of particular concern, the Board found that:{28}

- Command and control advances made in recent operations had not been institutionalized.

- Systems engineering for the developing, fielding, and integrating a "network-enabled operations information infrastructure" was inadequate.

- DoD lacked a systematic process for setting priorities among competing information infrastructure programs. And, indeed,

- The authorities for developing a "network-enabled operations information infrastructure" were not fully established.

What the above suggests is that the weakness of joint endeavors is reproducing itself by undermining the development of common C4I systems. In this light, it is not surprising that inter-service networks have not developed to the point where DoD might consider (and the services might accept) more substantial tradeoffs between individual service capabilities. Put simply: it is far from the case that "all is available all".   Moreover, it is not clear that such can be achieved if policy proceeds along its current path.

Even if the services accepted and achieved the type of deep structural cooperation that network centric visions entail, there is no guarantee that this would translate into "savings". National leadership and DoD might choose instead seek to retain a power dividend. This already has been the case with regard to the most substantial technology-driven advance of the past 20 years: the great increase in the number of targets the US armed forces can engage from a standoff distance and in all weather conditions, day or night.

Air Force combat aircraft presently possess twenty times the ground target interdiction capability of their 1990 counterparts (on average, plane for plane).{29} And the introduction of the small diameter bomb will make for another qualitative leap. The Navy claims that the target attack capacity of its carrier air wings has grown from about 200 a day in 1997 to more than 700 today.{30}   The number of missile launch systems on surface ships also has increased substantially – from about 1900 in 1990 to 8000 today.{31} Implicit in this is the opportunity for a significant reduction in strike assets – so far not forthcoming.

Notes

1. *Major Management Challenges and Program Risks Department of Defense* (Washington DC: US Government Accountability Office, January 2003). Also see: Gene L. Dodaro, Acting Comptroller General of the United States, "Maximizing DoD's Untapped Potential to Improve Business Performance," *DoD Performance Breakthrough Convention,* Lansdowne VA, 14 October 2009; and, The Honorable David Walker, Comptroller General of the United States, "DoD Transformation Challenges and Opportunities," testimony before the House Armed Services Committee, 24 Jan 2007.

2. Among others, these include Vice Admiral Arthur K. Cebrowski, who served as Director of the Office of Force Transformation from 2001 to 2005; Col. Douglas Macgregor (US Army), author of *Breaking the Phalanx* (Westport CT: Praeger, 1997); Andrew Marshall, director of the Office of Net Assessment; Adm. William C. Owens, author of *Lifting the Fog of War* (Baltimore MD: John Hopkins University Press, 2001), who served as Vice Chairman of the Joint Chiefs of Staff from 1994-1996; and, Franklin C. Spinney, who served in the Office of Program Analysis and Evaluation from 1977 to 2003.

3. A Defense Science Board task force concluded in 2005 that "the extent of influence that the Office of Force Transformation has had on the rest of the Department is debatable, and many view the office as merely an appliqué." *DSB 2005 Summer Study on Transformation, Vols. I & II* (Washington DC: Office of the Under Secretary of Defense For Acquisition, Technology, and Logistics, April 2006), *Volume 11,* p. 209. On the risks involved for "maverick" thinkers inside the services, see Tom Ricks, "Colonel's Transfer Said To Test Bush's Military Reform Pledge," *Washington Post,* 20 February 2002.

4. *Directions for Defense: Report of the Commission on Roles and Missions of the Armed Forces* (Washington DC: US Government Printing Office, June 1995). For critical perspectives see: Andrew F. Krepinevich, *Missed opportunities: An Assessment of the Roles & Missions Commission Report* (Washington DC: Defense Budget Project, 1995); David C. Morrison, "Roles Panel Doesn't Roil Anybody," *The National Journal,* 10 June 1995; Philip Gold, "Military roles and missions, commission-style," *Washington Times,* 31 May 1995; and John T. Correll, "Surprise Package on Roles and Missions," *Air Force Magazine* (August 1995).

5. Colonel Richard A. Lacquement, Jr., *Shaping American Military Capabilities after the Cold War* (Westport CT: Praeger Publishers, 2003), p. 104.

6. Cindy Williams, "Holding the Line on Infrastructure Spending" in *Holding the Line: US Defense Alternatives for the 21 st Century,* ed. C. Williams (Cambridge MA: MIT Press, 2001), p 60.

7. *Trends in Operation and Maintenance Costs and Support Services Contracting* (Washington DC: Government Accountability Office, May 2007); and, *Defense Outsourcing: The OMB Circular A-76 Policy* (Washington DC: Congressional Research Service, 23 January 2001).

8. *Military Base Realignments and Closures: Estimated Costs Have Increased While Savings Estimates Have Decreased Since Fiscal Year 2009* (Washington DC: US Government Accountability Office, November 2009); *Military Base Realignments and Closures: DoD Faces Challenges in Implementing Recommendations on Time and Is Not Consistently Updating Savings Estimates* (Washington DC: US Government Accountability Office, January 2009); and *Military Base Closures: Observations of Prior and Current BRAC Rounds* (Washington DC: US Government Accountability Office, May 2005).

9. Gene L. Dodaro, Acting Comptroller General of the United States, "Maximizing DoD's Untapped Potential to Improve Business Performance," *DoD Performance Breakthrough Convention,* Lansdowne VA, 14 October 2009; *Defense Business Transformation: Sustaining Progress Requires Continuity of Leadership and an Integrated Approach* (Washington DC: US Government Accountability Office, March 2008); and, David M. Walker, Comptroller General of the United States, "DoD Transformation Challenges and Opportunities," testimony before the House Armed Services Committee, 24 Jan 2007.

10. Dodaro, "Maximizing DoD's Untapped Potential to Improve Business Performance."

11. Kwai Chan, *Financial Management in the Department of Defense: No One is Accountable* (New York: Business Leaders for Sensible Priorities, May 2006).

12. *Modernizing Defense Logistics* (Arlington VA: Aerospace Industries Association, 2009).

13. *Defense Science Board 2005 Summer Study on Transformation: A Progress Assessment* (Washington DC: Under Secretary of Defense For Acquisition, Technology, and Logistics, April 2006), *Volume II,* p. 19.

14. *Assessments of Selected Weapon Programs* (Washington DC: GAO, 30 March 2009).

15. Anthony H. Cordesman and Paul S. Frederiksen, *Is Defense Transformation Affordable? Cost Escalation in Major Weapons Programs, Draft* (Washington DC: CSIS, 27 June 2006).

16. Fred Kaplan, "Rumsfeld's Legacy 'Military transformation'? Mission not-yet-accomplished," *Salon,* 19 October 2004; and, Thomas Ricks, "Rumsfeld on High Wire of Defense Reform," *WP,* 20 May 2001.

17. *Creating Defense Excellence: Defense Addendum to Road Map for National Security* (Washington DC: US Commission on National Security/21st Century, May 2001).

18. Adm. William C. Owens, *Lifting the Fog of War* (Baltimore MD: John Hopkins University Press, 2001); and, Lt. General Frederic J. Brown, USA (Ret.), *The US Army in Transition II: Landpower in the Information Age* (Washington: Brassey's, 1993).

19. Clay Wilson, *Network Centric Warfare: Background and Oversight Issues for Congress* (Washington DC: Congressional Research Service, March 2005); *The Implementation of Network Centric Warfare* (Washington DC: Office of the Secretary of Defense, 5 January 2005); and, Vice Admiral Arthur K. Cebrowski (USN) and John H. Garstka, "Network-Centric Warfare: Its Origin and Future," *Proceedings* (January 1998).

20. Dan Caterinicchia and Matthew French, "Network-centric warfare: Not there yet," *Federal Computer Week,* 9 June 2003.

21. Dawn Onley, "Military fights C4I digital divide," *Government Computer News,* 19 Nov 2003; John Ferris, "A New American Way of War? C4ISR in *Operation Iraqi Freedom,* A Provisional Assessment," *Journal of Strategic and Military Studies* (Spring-Summer 2003); and, David Fulghum, "Force-transformation director looks at what did, didn't work in Iraq," *Aviation Week & Space Technology,* 2 May 2003.

22. Onley, "Military fights C4I digital divide." Also see: Marc Selinger, "Faster battle damage assessments needed, war study finds," *Aerospace Daily,* 3 October 2003.

23. Lieutenant Commander Carl M. Bradley (USN), *Intelligence, Surveillance and Reconnaissance in Support of Operation Iraqi Freedom: Challenges for Rapid Maneuvers and Joint C4ISR Integration and Interoperability* (Newport RI: Naval War College, September 2004).

24. *Department of Defense Needs Framework for Balancing Investments in Tactical Radios* (Washington DC: Government Accountability Office, 15 August 2008); *Resolving Development Risks in the Army's Networked Communications Capabilities Is Key to Fielding Future Force* (Washington DC: Government Accountability Office, 15 Jun 2005); and, *Recent Campaigns Benefitted from Improved Communications and Technology, but Barriers to Continued Progress Remain* (Washington DC: Government Accountability Office, June 2004).

25. Kenneth Allard, "Interoperability Is Hilt of Information Based Sword," *C4I News,* 6 November 1997.

26. Joint Defense Capabilities Study Team (E.C. Aldridge, team leader), *Joint Defense Capabilities Study Final Report* (Washington DC: Office of the Under Secretary of Defense For Acquisition, Technology, and Logistics, January 2004), p iii.

27. *Defense Science Board 2005 Summer Study on Transformation: A Progress Assessment* (Washington DC: Under Secretary of Defense For Acquisition, Technology, and Logistics, April 2006), *Volume II,* p. 213.

28. *DSB Summer Study on Transformation, Volume II,* pp. 214 and 217-218.

29. Carl Conetta, *Toward a sustainable US defense posture: an option to save $60+ billion over the next five years,* Project on Defense Alternatives Briefing Memo #42 (Cambridge MA: Commonwealth Institute, 2 August 2007).

30. Admiral Vernon Clark, Chief of Naval Operations, statement before the Senate Armed Services Committee, 10 February 2005, p. 18.

31. *Transforming the Navy's Surface Combatant Force* (Washington DC: CBO, March 2003).