Backgrounder

A Congressional Guide to Defense Transformation: Issues and Answers

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Transformation is transforming. The Pentagon employs the term "transformation" to describe its efforts to shift the military away from its Cold War posture and toward a structure that is better prepared for future conflict and threats. This process has always had two aspects. The first is transformation for transformation's sake—applying emerging technologies to overmatch any potential adversary. That has always been the Pentagon's priority. The second is transforming the military to address the diverse security challenges that the United States anticipates facing in the 21st century.

While both are valuable, mastering the second remains the more crucial. To its credit, the Administration has been *transforming* transformation to reflect this precedence. Yet the three critical questions that are raised most frequently in the transformation debate have still not been addressed adequately:

- What needs to be transformed?

- Should the U.S. build its force based on existing threats or around broad capability requirements?

- Should the U.S. focus its transformation efforts on platforms or on systems?

Ultimately, each question requires a complex answer. Not everything needs to undergo transformation, but some things certainly do. The United States must seek new capabilities within the context of potential threats, and neither platforms nor systems can be ignored. Understanding how to address each of these issues—as well as providing the robust

Talking Points

- The Pentagon uses "transformation" to describe its efforts to shift the military away from an instrument optimized to fight the Cold War to one capable of mastering future ways of conflict. Transforming the military to address the diverse security challenges that the United States anticipates facing in the 21st century must be the Pentagon's priority.

- Changes in the U.S. armed forces alone are not enough. Transforming all the instruments of national power to better address 21st century challenges should be a priority issue for the Congress.

- Even if the Pentagon correctly determines how to address the challenges of mapping a course for transformation, it will be wasted effort if the Congress does not provide adequate resources. The greatest challenge facing today's military is to avoid becoming a hollow force.

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defense budgets needed to transform today's military into the right armed forces for the decades ahead—must be a priority for Congress.

A Brief History of Transformation

The debate over radically restructuring modern militaries for future war predates the end of the Cold War.[1] After the fall of the Berlin Wall, however, calls for changes in the U.S. military became a clarion call. Some analysts argued that the collapse of the Soviet Union and the emergence of dramatic new military capabilities—such as stealth aircraft, precision-guided weapons, and information technologies like computers—presaged an era of transformation, "innovation on a grand scale,"[2] undertaken to exploit major changes in the character of conflict.

George W. Bush embraced the concept of transformation in his first major address on defense issues during his 1999 presidential campaign. At the Citadel, Bush declared that he wanted to "take advantage of a tremendous opportunity…created by a revolution in the technology of war.… [T]he real goal is to move beyond marginal improvements—to replace existing programs…to skip a generation of technology."[3] These remarks created high expectations that the new Administration would endorse an approach to change that heavily emphasized transforming for transformation's sake.

The Pentagon's new leadership employed transformation rhetoric as well. The 2001 Quadrennial Defense Review (QDR)—a mandatory report to Congress assessing the military's strategy, force structure, missions, and resources—emphasized "capabilities-based planning," developing new military means not tied to specific threats but based on pushing the limits of what could be achieved with operational concepts, organizations, and technologies.[4] Secretary of Defense Donald Rumsfeld also created an Office of Force Transformation. Among its many activities, the office crafted planning guidance that defined transformation as "a process that shapes the changing nature of military competition and cooperation."[5] These efforts portended a military transformation intent on achieving the overmatching and unprecedented conventional combat power promised in Bush's 1999 speech.

Uniformed military leaders embraced this image of transformation because it allowed admirals and generals to continue to focus on the mission with which they were most comfortable: the challenge of fighting and winning wars against conventional forces. Additionally, the open-ended nature of transformation left the services largely to define the process however they wished. For example, a Government Accountability Office report concluded that the Office of Force Transformation had no charter, formal responsibilities, or authority to direct changes.[6] There were no measures of performance or means to judge progress and value. Thus, the services could label acquisition programs that had begun long before the end of the Cold War as transformational or define their goals and rationale with little more than colorful PowerPoint slides and a plethora of adjectives like "faster, lighter, and more lethal."

1. Williamson Murray and MacGregor Knox, "Conclusion: The Future Behind Us," in Williamson Murray and MacGregor Knox, eds., *The Dynamics of Military Revolution, 1300–2050* (Cambridge, U.K.: Cambridge University Press, 2001), pp. 3–4.

2. Andrew F. Krepinevich, testimony before the Committee on Armed Services, U.S. Senate, April 9, 2002, at *www.csbaonline.org/4Publications/Archive/T.20020409.Defense_Transforma/T.20020409.Defense_Transforma.htm* (April 13, 2005).

3. George W. Bush, "A Period of Consequence," speech at the Citadel, Charleston, South Carolina, September 23, 1999, at *www.citadel.edu/r3/pao/addresses/pres_bush.html* (April 13, 2005).

4. U.S. Department of Defense, *Quadrennial Defense Review Report*, September 30, 2001, at *www.defenselink.mil/pubs/qdr2001.pdf* (April 13, 2005).

5. U.S. Department of Defense, *Transformation Planning Guidance*, April 2003, p. 3, at *www.defenselink.mil/brac/docs/transformationplanningapr03.pdf* (April 13, 2005).

6. U.S. Government Accountability Office, *Defense Transformation: Clear Leadership, Accountability, and Management Tools Are Needed to Enhance DOD's Efforts to Transform Military Capabilities*, GAO–05–70, December 2004, p. 19, *www.gao.gov/new.items/d0570.pdf* (April 13, 2005).

However, the Citadel speech was also infused with a call for an alternative approach to transformation that emphasizes changing to meet *all* the national security challenges of the 21st century. Bush spoke of preparing to deal with terrorism, ballistic and cruise missile threats, information warfare, protecting the homeland, and responding to disruption of finance, communication, transportation, and public health networks, as well as other dangers that looked little like conventional warfare.

The Pentagon's generals and admirals were less comfortable with notions of transformation that did not center on high-tech equipment and fighting conventional forces. Despite their intransigence, the second path to transformation appears to have become more deeply rooted in the Pentagon's thinking. The cancellation of the Army's Comanche helicopter seems to have been a case in point. The Army decided to forgo the new aircraft less because it intended to skip a generation in technology than because it realized that the money could be used to support a range of programs that would better enable the service to conduct all tasks requiring aviation support.[7]

Indeed, transforming to support more effectively the variety of future missions that the military might be called upon to perform has emerged as a Pentagon priority. For example, establishing missile defenses and creating U.S. Northern Command reflected an increasing emphasis on protecting the homeland, a mission that had been largely neglected before the September 11 terrorist attacks. The guidance issued for the impending 2005 Quadrennial Review included a "changing security environment" or "threat" matrix defining four broad areas of capabilities that the U.S. military needed to provide in the future: responding to conventional military threats, "irregular" challenges such as terrorism and insurgent campaigns, cata-

strophic dangers like weapons of mass destruction, and "disruptive" threats emanating from military competitors who develop new or unexpected capabilities, such as cyberattacks or biowarfare.[8]

However, after four years, the full character of the Pentagon's transformation strategy is still far from clear. For example, while the leadership has called for a mix of capabilities to meet many missions, its acquisition plans still call for—much as they did during the Cold War—buying a fleet of next-generation short-range, manned aircraft that will consume the lion's share of the Defense Department's procurement budget for years into the future.[9]

Key Transformation Questions

The results of this year's QDR will help to define what the Pentagon does next. The challenge for the Department of Defense (DOD) is to expand its capacity to address irregular, catastrophic, and disruptive dangers while retaining a robust capability to deal decisively with conventional military threats. One should not be sacrificed in pursuit of the other. Achieving this balance may require skipping a generation of technology in some cases. In other matters, modernizing or recapitalizing assets, changing strategies, or reorganizing current forces may be the right answer.

In the debate over setting the best course for the Pentagon's transformation efforts, three critical issues are routinely raised.

- **What needs to be transformed?** U.S. security is guaranteed by *all* of the elements of national power—the military, economic, diplomatic, informational, and political instruments that allow America to act in the world. Which instruments need the most radical reform?

- **Should threats or capabilities drive future military developments?** The 2001 QDR

7. James Jay Carafano, Ph.D., "Canceling Comanche: All the Right Moves," Heritage Foundation *WebMemo* No. 433, February 25, 2004, at *www.heritage.org/Research/NationalSecurity/wm433.cfm*.

8. Jack Spencer and Kathy Gudgel, "The 2005 Quadrennial Defense Review: Strategy and Threats," Heritage Foundation *WebMemo* No. 682, March 11, 2005, at *www.heritage.org/Research/NationalSecurity/wm682.cfm*.

9. Richard L. Kugler, "The Defense Budget: Meeting Requirements with Constrained Resources," in Michèle A. Flournoy, ed., *QDR 2001: Strategy-Driven Choices for America's Security* (Washington, D.C.: National Defense University Press, 2001), pp. 125–129.

emphasized capabilities-based planning. The 2005 QDR argues that the "threat" matrix should define future needs. Which is right?

- **Should the military focus on developing platforms or systems?** Acquiring new platforms emphasizes fielding a new generation of ground vehicles, aircraft, and ships. Putting a priority on "system development" emphasizes overall systems performance, not individual platforms. Which approach is right?

Answering these questions is central to keeping the military on the right transformation path.

What to Transform?

The fundamental controversy regarding transformation is about what needs to be transformed. Much of the transformation debate centers on military capabilities.[10] On the other hand, others argue that improving how the military is employed in concert with the other instruments of national power—a process often called interagency operations—is more important.[11]

Calls for interagency reform cut across the political spectrum. "Our real national security goals transcend the Defense Department," argued Newt Gingrich. "We do not today have an effective interagency process…. [I]t is the heart of our ability to operate around the planet and we frankly are not very well organized for it."[12] A recent report by the Center for Strategic and International Studies also concluded that transforming the interagency process, particularly cooperation with the armed forces, should be the highest priority.[13]

Improving the integration of defense activities with other agencies has always been problematic. Disparate organizational cultures, resources, and conflicting priorities make cooperation difficult. The DOD has made only a modicum of effort to improve the interagency process. For example, the Office of Force Transformation's planning guidance states only that the DOD should "share information with other agencies on its transformation programs and encourage other agencies to follow suit."[14] Such direction offers little likelihood of dramatic change, despite some recent modest initiatives undertaken by the department.[15]

Even if the Defense Department was fully committed to transforming interagency operations, it lacks the authority to implement such a program without direction and support from the Administration. While the QDR identifies important issues requiring improved interagency processes and capabilities, as a DOD-authored document, it cannot really speak to how national security issues should be addressed across multiple agencies.

10. Ian Roxborough, "From Revolution to Transformation: The State of the Field," *Joint Force Quarterly*, No. 32 (Autumn 2002), p. 75, at *www.dtic.mil/doctrine/jel/jfq_pubs/1332.pdf* (April 16, 2005).

11. Scott W. Moore, "Today It's Gold, Not Purple," *Joint Force Quarterly*, No. 20 (Autumn/Winter 1998–1999), pp. 100–105, at *www.dtic.mil/doctrine/jel/jfq_pubs/1820.pdf* (April 16, 2005).

12. Newt Gingrich, "The Transformation of National Security," speech at the Board of Overseers Meeting, Hoover Institution, July 18, 2002, at *www-hoover.stanford.edu/research/conferences/boo2002july.html* (April 13, 2005).

13. Clark A. Murdock, Michèle A. Flournoy, Christopher A. Williams, and Kurt M. Campbell, "Beyond Goldwater–Nichols: Defense Reform for a New Strategic Era," Phase 1 Report, Center for Strategic and International Studies, March 2004, p. 9, at *www.csis.org/isp/gn/phase1.pdf* (April 14, 2005).

14. U.S. Department of Defense, *Transformation Planning Guidance*, p. 7.

15. The DOD has made some efforts to improve its cooperation with other federal departments. As part of its experimentation program, for example, the U.S. Joint Forces Command initiated a Joint Interagency Coordination Group (JIACG) concept to establish operational connections between civilian and military departments and agencies that will improve planning and coordination within the government. See James T. Hill, statement before the Committee on Armed Services, U.S. House of Representatives, March 13, 2003, p. 16, at *armed-services.senate.gov/statemnt/2003/March/Hill.pdf* (April 14, 2005). Another defense initiative is the National Defense University's Interagency Transformation, Education and After Action Review (ITEA) program. See National Defense University, "Program for Interagency Transformation, Education and After Action Review," at *www.ndu.edu/ITEA/storage/535/ITEA_Overview_Revised,_Web_site.pdf* (April 14, 2005).

Congress and the Administration must play an active role. They could clearly signal the importance of transforming how government protects America by taking two steps:

- **Establishing a National Security Review** to provide an independent assessment of the QDR as part of an overall analysis of national security and to make recommendations on how to improve interagency cooperation. Without a government-wide assessment of America's national security apparatus, security functions could gravitate to the wrong agencies or departments.

  The QDR tends to lead Congress and the Administration to focus excessively on military instruments as the best solutions to national security challenges at home and abroad. Indeed, "every problem looks like a nail, when all you have is a hammer." Congress should give equal attention to ensuring that all the U.S. national security instruments are adequate, complementary, and properly integrated.

- **Scrapping the Pentagon's network of regional commands.** The Unified Command Plan (UCP), the military's current global command scheme, was set up to fight a worldwide war with the Soviet Union. It is a relic. Regional military commands such as the European Command (EUCOM) should be abolished. They should be replaced with Joint Interagency Groups (InterGroups) designed for the challenges of the future, not the problems of the past.

  The United States should maintain major military commands for working with U.S. allies in Europe and Northeast Asia and to protect the homeland. In addition, it should establish three InterGroups composed of interagency staffs and assets that are organized to provide the instruments of national power needed to address U.S. security concerns in the world's most troubled regions.

1. A Latin America InterGroup would focus on drug, human, and arms trafficking; counterterrorism; civil–military relations; and trade liberalization.

2. An Africa–Middle East InterGroup would focus on counterterrorism, weapons proliferation, economic development, fighting AIDS and other infectious diseases, peacekeeping training and support, transnational crime, and civil–military relations.

3. The Central and South Asia InterGroup would concentrate on counterterrorism, weapons proliferation, training police forces, anti-piracy measures, civil–military relations, transnational crime, and fighting AIDS and other infectious diseases.[16]

Changes in the military alone are not enough. Transforming all the instruments of national power to better address 21st century challenges must be a priority for Congress.

Threats or Capabilities?

Before the end of the Cold War, assessments of strategy, force structure, and modernization needs were based on evaluations of the Soviet threat. Even though the first QDR (1997) was conducted almost a decade after the collapse of the Soviet Union, the review was still based on "threat scenarios," such as a war with North Korea.

In contrast, the 2001 QDR formalized a shift in defense planning to a new capabilities-based model. This approach aimed to drive developments based on "how an adversary might fight, rather than specifically whom the adversary might be, or where a war might occur."[17] "It is clear," Secretary of Defense for Policy Douglas Feith told the Senate Armed Services Committee, "that the Defense Department needs to plan, but we must plan to be surprised." Feith argued that

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16. James Jay Carafano, Ph.D., "Missions, Responsibilities, and Geography: Rethinking How the Pentagon Commands the World," Heritage Foundation *Backgrounder* No. 1792, August 26, 2004, at *www.heritage.org/Research/NationalSecurity/ bg1792.cfm*.

17. U.S. Department of Defense, *Quadrennial Defense Review Report*, p. iv.

implementing the capabilities approach was an essential corrective to thinking that had long been based on the sure knowledge of the nature of the enemy that the United States would be likely to face in the future.

After four years of trying to implement a capabilities-based approach, and with America well into its second decade of post–Cold War operations, the issue of what should drive transformation is again up for debate. Should transformation continue to be driven by a capabilities-based approach, or is there reason to return to a traditional threat-based method of defining requirements?

The traditional threat-based model, centering on an easily identifiable threat, is certainly outmoded for today's security environment. Defense Secretary Donald Rumsfeld has rightly argued that "the old reliance on presence and mass reflects the last century's industrial age thinking."[18]

However, the capabilities-based model, despite its current favor with planners, also has shortcomings. The most significant problem is trying to write a budget. The capabilities-based model is open-ended. It is impossible to imagine, build, resource, and deploy every possible desired capability. It is also difficult to prioritize which new capabilities are the most important without a threat against which to measure requirements. The limiting factor in capabilities-based planning is budgetary, not strategic, when it should be a combination of both.

There is an alternative that incorporates the best aspects of each approach. It is not a new idea. In the early 1990s, then-Chairman of the Joints Chief of Staff Colin Powell developed such a model as part of the "Base Force" formulation. General Powell's thinking addressed both threats and capabilities in a combination approach to force sizing.[19] A combination capabilities-based and threat-based model can assist planners by:

- Providing a broad strategic framework;
- Determining what types of capabilities potential adversaries might possess;
- Anticipating tactics;
- Developing capabilities to fill gaps, based on a meaningful risk assessment; and
- Directing resources to capabilities that are most likely to be needed.

Keeping DOD's transformation efforts on track will require ensuring that the QDR reflects a judicious combination of both threat-based and capabilities-based planning.

The 2005 QDR should revitalize and update the idea of a combined threat-based and capabilities-based approach to suit today's security challenges. The difference between General Powell's approach in the early 1990s and today's changed security environment is that the U.S. has a better appreciation for the nature of post–Cold War threats. Armed with this knowledge, the Pentagon must implement flexible planning systems based on a combination of capabilities-based and threat-based planning methods.

Systems or Platforms?

Ever since the end of the Cold War, the controversy over whether the Pentagon should focus on buying new platforms or emphasize building new "systems" (networks of weapons, equipment, people, and organizations linked by information technologies) has continued unabated. The Pentagon's rhetoric overwhelmingly emphasizes the importance of systems. "Networked forces and shared situational awareness," declares the Office of Transformation's planning guidance, "will transform warfare."[20] On the other hand, service acquisition programs continue to emphasize purchasing new platforms including light armored vehicles, manned fighter

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18. Donald Rumsfeld, "Global Posture," testimony before the Committee on Armed Services, U.S. Senate, September 23, 2004, at *www.defenselink.mil/speeches/2004/sp20040923-secdef0783.html* (April 14, 2005).

19. Lorna S. Jaffee, "The Development of the Base Force, 1989–1992," U.S. Department of Defense, Joint History Office, July 1993, *www.dtic.mil/doctrine/jel/history/baseforc.pdf* (April 16, 2005).

20. U.S. Department of Defense, *Transformation Planning Guidance*, p. 5.

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aircraft, and next-generation destroyers. DOD leadership is still struggling to determine the right balance between systems and platforms.

In practice, what matters most in joint warfare is overall systems performance, not individual platforms. In fact, given the right system, even old weapons can provide dramatic new capabilities. As Naval War College Professor Mackubin Owens points out, creating new ways of warfare is not an "all-or-nothing proposition"[21] that requires scrapping all old weapons for new ones. The Joint Direct Attack Munition (JDAM), which turns a bomb built in the 1950s into a precision-guided 21st-century weapon by adding a $20,000 guidance kit, is a case in point.

That said, even in "systems-centric" warfare, platforms still matter. In war, systems do not always perform as expected. Sometimes they fail, leaving soldiers, sailors, and airmen dependent on their platforms. For example, it is unclear whether or not the military can yet achieve sufficient situational awareness of the battlefield to avoid all threats and completely give up the lethality and protection that some platforms provide in exchange for significantly lighter weight and greater speed. In close combat, robust platforms still matter. They are a hedge against the inevitable friction of battle that drags against any system in wartime.[22]

While existing ships, planes, and tanks can be used in new and effective ways when plugged into these emerging information networks, the fact is that many of these platforms were developed for different times, different places, and different wars. Now is the time to develop a long-term investment strategy for replacing them. Underfunding and overuse during the 1990s, followed by three years of war since September 11, 2001, have left the United States with military equipment that is worn down and aging. Large portions of the force will need to be replaced in the next decade. While this certainly presents problems, it also presents an opportunity to make significant changes in the force by implementing a coherent and focused modernization strategy.

There are three alternative approaches to buying new platforms: modernizing the current generation of weapons, investing in next-generation technologies, or developing totally new futuristic weapons.

Current-Generation Weapons. Current-generation platforms, often referred to as the "legacy force," are the same as or marginally better than the military has had for the past 20 years. A modernization strategy that focuses on legacy weapons is the least expensive initially and the least time-consuming to put into operation. For example, instead of developing an advanced multi-role fighter, the U.S. Air Force could quickly build a consignment of F-16s—the mainstay of today's Air Force that was developed during the 1970s. Or an aging weapons system could be upgraded to a new version, retaining most of the characteristics of the original system or program but employing some new technologies that yield only marginally improved capabilities.

On the other hand, the disadvantages of maintaining legacy forces are not insignificant. Less advanced systems cost more to maintain over their

21. Mackubin Thomas Owens, "Transforming Transformation: Defense-Planning Lessons from Iraq," *National Review*, April 23, 2003, at *www.nationalreview.com/owens/owens042303.asp* (April 14, 2005). See also Williamson Murray and Thomas O'Leary, "Military Transformation and Legacy Forces," *Joint Force Quarterly*, No. 30 (Spring 2002), pp. 20–27, at *www.dtic.mil/doctrine/jel/jfq_pubs/0630.pdf* (April 16, 2005). The authors examine cases of effective military transformation during the years between World War I and World War II and prior to the Persian Gulf War to demonstrate that new concepts of war can be introduced with forces using mostly extant capabilities and only a modicum of new technologies and advanced equipment.

22. Another example of the danger of overreliance on systems can be taken from the business world. The downfall of AT&T offers a case in point. The company had a brilliant vision to transform itself from a long-distance carrier to a full-service telecommunications provider, but every piece of their new system had to arrive on time and on budget for the whole thing to work: They did not, and the company's profits plummeted, costing AT&T its blue chip status. See Paul Bracken, "Corporate Disasters: Some Lessons for Transformation," *Joint Force Quarterly*, No. 32 (Autumn 2002), p. 84, at *www.dtic.mil/doctrine/jel/jfq_pubs/1532.pdf* (April 16, 2005).

lifetime, may lag behind the threat, and divert money away from the acquisition of new, more capable systems. Yet this path may be the best response when the quality of current equipment is suitable for anticipated future missions. For example, while it is possible to develop an entire new generation of land combat vehicles that can be deployed in C-130 aircraft, it is not clear that such a force is really necessary to meet the nation's strategic deployment needs. In many cases, purchasing new weapons to replace aging ones of the same class is the right answer. This approach will ensure a well-functioning and modern force until the threat environment dictates a change.

Next-Generation Weapons. Next-generation weapons are the evolutionary extension of existing weaponry. Instead of producing more of the same weapons or marginally improving existing platforms, investing in the next generation of weapons and applying new designs and technologies to current models will yield much more advanced capabilities.

Such new weapons systems should not only replace the previous generation, but also be significant upgrades to their predecessors. For example, while the F/A-18 E/F infuses new technology into an old design, the Joint Strike Fighter is the next generation of carrier-based tactical fighters, utilizing advanced technologies in both design and production. Yet the Joint Strike Fighter is still a continuation of the carrier-based weapons system. Although it incorporates many technological advances that give it a distinct advantage over the F/A-18 E/F, it only begins to redefine how the Navy will conduct its operations.

Investing in the next generation of weapons will enable the United States to maintain military superiority over potential adversaries that pursue similar capabilities. Furthermore, by building in cost-saving measures and employing efficient production practices, these next-generation weapon systems could cost less over their lifetime.

However, a modernization strategy that relies too heavily on next-generation weaponry also has significant disadvantages. Next-generation weapons often require a greater initial investment to complete development and begin production. Furthermore, some evolutionary capabilities may not be sufficient to meet the next threat, making further investment useless. Buying next-generation systems may also prematurely "lock in" technology, committing the Pentagon to an expensive research and acquisition program for platforms that emerging new tactics or technologies may quickly render obsolete. Finally, investing too heavily in evolutionary systems could interfere with the Pentagon's ability to fund other critical transformation efforts, such as repositioning and reorganizing forces.

Transformational Weapons. Transformational weapons (or skipping a generation of technology) are platforms that bring new capabilities to bear that change how operations are conducted. Much as gunpowder, aircraft carriers, and nuclear weapons changed how wars were fought in the past, information technology is doing the same today. These could include such weapons as unmanned combat aircraft, long-range bombers that transverse space, or directed-energy weapons such as lasers and microwaves.[23] For example, the Chinese are developing passive air-defense systems that detect the slight turbulence of commercial radio and television waves caused by aircraft flight—a capability that could prove effective against America's stealthy aircraft. A revolutionary response would be to develop space bombers or hypersonic cruise missiles.

Skip-generation platforms might take advantage of emerging technologies, such as robotics, biotechnology, nanotechnology, and microelectronic mechanical systems.[24] By investing in

23. For example, see Jack Spencer and James Jay Carafano, Ph.D., "The Use of Directed-Energy Weapons to Protect Critical Infrastructure," Heritage Foundation *Backgrounder* No. 1783, August 2, 2004, at *www.heritage.org/Research/NationalSecurity/bg1783.cfm*.

24. For example, see Shannon L. Callahan, "Nanotechnology in a New Era of Strategic Competition," *Joint Force Quarterly*, No. 26 (Autumn 2000), p. 21, at *www.dtic.mil/doctrine/jel/jfq_pubs/0626.pdf* (April 16, 2005).

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them, the United States would be better prepared to defend its interests against future threats. Revolutionary systems also could be far less expensive to develop and deploy over the long term than much of today's force because they would be less manpower-intensive and would incorporate new, more efficient technologies.

A transformational modernization strategy also has certain disadvantages. Most of these systems exist only on paper or are early in their development. Developing them on a more rapid timetable would require a large up-front investment and involve a significant time lag before they could be deployed. Furthermore, funding for research, development, and acquisition of these systems would be diverted away from other systems that could be brought into the current force more rapidly, and there is always the risk that the technologies may never pan out. Most important, these systems do nothing to address current and near-term threats.

Ultimately, there is no one approach to defense modernization. Instead, Congress must look at programs and capabilities and individually assess which approach is best. In making those decisions, the following modernization principles offer a useful guide.

- **Long-term investments should not be made at the expense of near-term requirements.** A prudent modernization strategy requires a deft understanding of current and future threats to U.S. interests and America's current ability to counter them. Identifying future threats is important, but ignoring current threats is irresponsible. Preparing for future tasks cannot be done at the expense of sustaining the ability to conduct current missions.

- **Modernization efforts should not neglect warfighting.** Building defense programs that enhance the ability of the U.S. military to fight and win wars must remain a priority. Other capabilities should not be developed at the expense of warfighting means. Additionally, the military should not develop capabilities for nonessential missions, such as peacekeeping operations. Modernization should focus on

providing capabilities to secure U.S. vital national interests.

- **Modernization should sustain a competitive advantage for the United States over its potential adversaries.** Modernization should address the military's unmet needs.

- **Modernization should balance capabilities with efficiency.** Efforts to modernize the U.S. military should achieve efficiency and cost-effectiveness.

- **Modernization should respond to a technologically and strategically changing security environment.** The United States does not hold a monopoly on technological innovation. Much of the technology available to the United States is also available to potential future adversaries. Therefore, the United States must be prepared to face adversaries who may transform themselves.

In short, Congress needs to insist that the DOD place a premium on systems *and* platforms. Defense modernization strategy should look much like a sound financial portfolio, with a balance of investments that promote growth, hedge against risks, and preserve current assets.

Avoiding the Hollow Force

Even if the Pentagon correctly determines how to address the three key challenges of mapping a course for transformation, it will be wasted effort if the Congress does not provide adequate resources. The greatest challenge facing today's military is to avoid becoming a hollow force.

Reductions after World War II and the Vietnam War left the Army without sufficient soldiers, training, and modern equipment to handle its world-wide commitments. As a result, U.S. troops were dangerously unprepared for the Korean War and lacked the conventional forces to deter the Soviets in Western Europe throughout the 1970s.[25] To avoid a similar fate, today's military must have sufficient resources to balance overseas commitments, readiness needs, and transformation requirements.

One presidential term, particularly with the high demand for military forces in the war on terrorism, was not enough to provide the military with what

the U.S. needs for the 21st century. Iraq is making transforming even tougher. Operations are straining the force. Helicopters are wearing out at five times their anticipated rate. Trucks are going into overhaul five times faster than anticipated. America's military is serving the nation well, but it is becoming a tired warhorse.

After Iraq, there will be pressure to balance the budget on the back of defense cuts. Before work on the 2005 QDR began in earnest, the Pentagon began to float proposals for trimming spending. Getting the military back in shape will require sustained investments for the foreseeable future. Until the drawdown in Iraq begins, Congress must provide timely supplemental funding. After Iraq, robust annual defense budgets should be axiomatic. Keeping spending at about 4 percent of GDP (only half of Cold War spending levels, but about 25 percent higher than the Clinton years) is a reasonable goal for sustaining the resources needed to transform the military and provide trained and ready forces.

Next Steps for Transformation

The coming year could be a critical one for charting the course of transformation. The Pentagon must continue to emphasize transforming the force to meet the security challenges of the 21st century.

Congress and the Administration can support these efforts by insisting that the QDR address the critical unresolved issues of the transformation debate. In particular, Congress should:

- **Insist** that transformation address not just the military, but all the requirements for effective interagency operations.

- **Demand** that the Pentagon develop a requirements process that balances the need to address threats and capabilities.

- **Require** a sophisticated platform modernization program to complement the armed forces' transformation efforts.

At the same time, Congress must provide adequate resources to support current operations, preserve combat readiness, and promote further transformation.

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25. In 1980, Army Chief of Staff General Edward C. Meyer used the term "hollow Army" in congressional testimony to describe the shortage of soldiers available to fill the service's field units. The term is now widely used to characterize shortages of personnel, training, and equipment that significantly impinge on military readiness. U.S. Department of Defense, "CJSC Guide to the Chairman's Readiness System," September 1, 2000, p. 3. For an illustration of the "hollow army" and its impact on the Korean War, see William W. Epley, "America's First Cold War Army, 1945–1950," Association of the United States Army, Institute for Land Warfare Studies *Land Warfare Paper* No. 32, August 1999, at *www.ausa.org/PDFdocs/lwp32.pdf* (April 14, 2005). A similar pattern of neglect occurred after the Vietnam War. For example, see Vincent H. Demma, *Department of the Army Historical Summary, Fiscal Year 1989* (Washington, D.C.: U.S. Army, Center of Military History, 1998), p. 4, at *www.army.mil/cmh-pg/books/DAHSUM/1989/CH1.htm* (April 14, 2005).