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America's Uncertain Approach to Strategy and Force Planning

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Working Draft for Review and Comment

Revised, July 5, 2006

Executive Summary

The US has consistently tried to adapt its tactics, training, and technology to meet constantly changing strategic conditions. US defense policy and strategy are never static, and transforming the defense community to keep up with the latest national security requirements is an ongoing process. Each of the US military services has been restructuring its training, C^4I systems, and equipment to improve its capability for counterinsurgency, stability operations, and asymmetric war for several years. So far, however, performance is at best "mixed," and there is only limited evidence that the US can meet the challenge of "force transformation" with the programs and resources it now has available.

The level of progress the US has made, and is making, becomes clearer when one looks at the efforts the Office of the Secretary of Defense (OSD), the Joint Chiefs, and the individual services have made to shape the process of transformation. Since 1997, the Congressionally-mandated Quadrennial Defense Review (QDR) exercises have attempted to present a broad, overall picture of the direction of US military transformation. In theory, these Reviews should provide a comprehensive examination of the national defense strategy, force structure, force modernization plans, infrastructure, budget plan, and other elements of the defense program. Their success in meeting these requirements has been limited.

The first QDR, released in 1997, was more a recipe for status quo than for change and more a series of ambiguous slogans than a tangible strategic plan. Congress was unimpressed. It viewed the 1997 QDR as a run-of-the-mill DoD budget exercise that reflected what military force structure would look like if funded at present budget levels. As such, it failed to challenge the status quo by making difficult choices and setting priorities.

The 2001 QDR was only a slight improvement over the 1997 Review. The sustained involvement of the Secretary of Defense and of senior DoD officials provided for a central, coherent vision of a US defense strategy that focused on specific defense policy goals—assuring allies and friends; deterring threats and coercion against US interests; if deterrence fails, decisively defeating any adversary. However, while the 2001 QDR did describe the importance of transformation efforts for dealing with asymmetric and terrorist threats, it offered scant direction on how the services might prevent or respond to so-called fourth-generation warfare attacks like the terrorist attacks of September 11, 2001. Moreover, it did little to describe major changes in US force structures and procurement plans and only had limited impact on the budget and the FYDP.

The failure of previous QDRs to shape US force plans and defense spending plans and to create a match between these goals and actual resources was not corrected in the 2006 QDR. The 2006 Review did make advances at the conceptual level as it shifted the DoD's emphasis on fighting major conventional wars to fighting more long-term, asymmetric conflicts and defending the homeland. It even linked this strategy shift to portions of the FY 2007 budget submission, such as increasing and expanding the role of Special Forces and advancing procurement of UAVs. However, the 2006 Review failed to make the trade-offs in the budget for conventional forces required to realize this shift in strategy. Thus, with the 2006 QDR, the DoD repeated its decades-long history of senior officials shying away from making tough decisions about defense planning.

The problems raised by the QDR are only part of the challenges in creating strategies and force plans that can be transformed into affordable realities. The Joint Chiefs and each of the military services have also advanced strategic concepts, and sometimes force plans, that have

compounded the problem of bringing strategy and force transformation into balance with resources. The constant changes in the post-Cold War security environment have created a world that requires the combined efforts of US forces to deal effectively with terrorist groups, failed states, stability and reconstruction operations, and homeland security in ways that cannot be assigned to individual services or to major unified and specified commands.

This emphasis on "jointness" was articulated in several strategy papers. With technology as the primary driver behind future warfighting, Joint Vision 2010, Joint Vision 2020, and subsequent planning documents (including the 2006 QDR) focused on broad calls for force-wide capabilities rather than on individual services. To accommodate this shift, the 2006 QDR recommended that the Pentagon plan, program, and budget according to joint capability areas and outcomes instead of dividing by and emphasizing individual services. Service core competencies would be assessed through what they brought to the joint fight.

Realizing the truly interoperable joint force described by the Joint Vision documents has seen limited success. The military has made major progress in establishing a joint command structure. However, implementing joint doctrine remains difficult because the individual services are reluctant to give up their power. Several incidents from US military operations in Kosovo, Afghanistan, and Iraq illustrated the disjunction between high level planning and operations in the field. More importantly, the new joint doctrine suffered from an overemphasis on technology over personnel, and neither of the Joint Vision documents created concrete force structures, programs, and resource plans to give US forces the level of information dominance that was the foundation of the "joint vision."

Nonetheless the Joint Vision documents have impacted transformation efforts across the armed forces. The Army is now seeking to create more brigades and implement major force changes through 2006-2007, completing them by 2009 at the latest. The Army's plans are far more tangible than the vague conceptual goals and priorities of the QDR and Joint Vision documents. At the same time, they raise far more tangible issues about "jointness," effectiveness, practicality, and affordability. The moment a plan becomes tangible, it illustrates just how critical it is to ensure that plans really can be implemented, are affordable, and represent the best overall mix of trade-offs to meet all the priorities of national security.

The Navy and Air Force have concentrated on cutting their active combat strength to fund future procurement. However, their track record for estimating their ability to trade current strength for future capability has been one of consistent failure. Both the Navy and the Air Force have consistently overestimated the potential benefits of cutting current forces, and neither service has demonstrated a consistent capacity to estimate the level of future capabilities it can afford through cutting current forces.

The Navy laid out an updated version of its transformational goals in 2002 with *Sea Power 21*. This document outlined the Navy's intention to counter national security challenges of the 21st century by moving toward net-centric warfare, using unmanned vehicles (UVs), creating more flexible and smaller naval formations, and being capable of operating in littoral areas. Other "transformational" initiatives included a series of efforts whose net effect was to try to trade force quantity for force quality by freeing money by reducing existing US forces. These initiatives have led to a steady process of downsizing while still meeting the Navy's steadily declining force goals.

However, the Navy's plans depend on impractical major weapons programs, procurement rates that cannot be achieved, and force improvements that are undercosted to the point of

unaffordability. Like the other services, the Navy has been "stretched" far more by its own planning failures than by the burden of ongoing military operations like the Iraq War.

The US Marine Corps' (USMC) plans for force transformation have sought both to meet the Corps' future needs and to complement the Navy's and the joint force's transformational goals to ensure that the US has sufficient expeditionary forces to carry out the full spectrum of roles, missions and tasks in the new century. Expeditionary Maneuver Warfare (2001) provided the foundation for 21st-century peacetime forward deployments, responses to crises worldwide, and warfighting to protect US citizens, allies, and interests wherever and whenever they may be at risk. As with the other services, implementing these concepts and platforms depends heavily on high cost transformational advances in technology.

The Air Force described its objectives for transforming its force in its Transformation Flight Plan (AFTFP), first published in 2003 and updated in 2004. These documents described the Air Force's transformation process as an effort to create an effects-based, capabilities-focused expeditionary air and space force. Rather than employing a Cold War-style, bottom-up, threat-based approach to force planning that focused on who an adversary may be or where a war may occur, the Air Force sought to achieve the desired military effects against a range of enemies on a variety of battlefields. The Concepts of Operations the Air Force developed focused on the capabilities planners need to maintain or develop before they consider what expeditionary platforms are required.

It should be noted that an examination of US strategy and force plans does not reveal fatal defects or some imminent crisis. It does, however, reveal a series of problems and issues that the US has failed to address in ways that ensure its military capabilities are both affordable and meet its future needs. The QDR exercises have made progress in dealing with the issues raised by the end of the Cold War, the Iraq War, the War on Terrorism, peacemaking, and homeland defense. The Joint Vision documents have made some progress towards truly integrating the capabilities of the US services. The strategic and force planning documents of the individual services have also made progress in transforming the total force, even if they have exposed serious problems in real jointness, realistic force planning, and in matching plans with resources in the process.

The key message is that the US must transform at least one aspect of its approach to transformation. It is brutally clear that strategy and planning documents that are not integrated with force planning and long-term budgets can often become hollow wish lists or—at a minimum—part of the problem as well as part of the solution. By this standard, the 2006 QDR simply symbolizes a process of continuing failure—of planning by hope and wish list and an abdication of the fundamental responsibilities of leadership and management.

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INTRODUCTION

The US has consistently tried to adapt its tactics, training, and technology to meet constantly changing strategic conditions. US defense policy and strategy are never static. They are in a constant state of evolution, and the US is acting to deal with the problems exposed in Iraq.

The latest Quadrennial Defense Review (QDR), issued in February 2006, has critical limitations, but it does call for change in many key areas. Each of the US military services has been restructuring its training, C^4I systems, and equipment to improve its capability for counterinsurgency, stability operations, and asymmetric war for several years. The role of Special Forces is being expanded at every level. The defense intelligence community is restructuring its tactical support capabilities, and the US Army is being restructured to create more, larger, independent and rapidly deployable brigades. So far, however, performance is at best "mixed," and there is only limited evidence that the US can meet the challenge of "force transformation" with the programs and resources it now has available.

The level of progress the US has made, and is making, becomes clearer when one looks at the efforts the Office of the Secretary of Defense (OSD), the Joint Chiefs, and the individual services have made to shape the process of transformation. While these efforts cannot be separated entirely from the Pentagon's funding and manpower issues, from its massive program and cost escalation problems, or from its difficulties in cultivating an effective interagency process linking civilian partners to the military, the transformation efforts of the major defense policy makers do, however, provide a tangible picture of how well and how badly the US is doing in coming to grips with both current "overstretch" and the needs of the future.

The Quadrennial Defense Review

The US may have reacted to the end of the Cold War by conducting a "build down" that left most of its forces postured for a world that was ceasing to exist, but it did conduct a series of major studies, including the 1991 Base Force Study and the 1993 Bottom-Up Review (BUR), designed to reevaluate US military strategy and force structure in the wake of the fall of the Soviet Union. General Colin Powell, former Chairman of the Joint Chiefs of Staff, coined the term "Base Force" to designate a structure representing the minimum military forces necessary for the United States to meet the national security objectives defined by policy makers, notably the capability to conduct two major theater wars (MTW) simultaneously.

The BUR proposed dealing with the changes in the global security environment and preventing conflict by promoting democracy and peaceful conflict resolution while connecting the US military with foreign militaries, especially those of the former Soviet Union. The BUR emphasized peacekeeping and peace enforcement operations and used the two major theater war scenario as the primary force-shaping construct.[1]

The BUR produced the plans for substantial US force cuts during the 1990s, but it was widely criticized on various fronts. Critics perceived it as a purely budget-driven review that failed to adequately address the challenges of the new international security environment. Congress was particularly dissatisfied with the BUR and specified three areas of criticism:[2]

- *The assumptions underlying the strategy of planning to fight and win two nearly simultaneous major regional conflicts;*
- *The force levels recommended to carry out that strategy; and*
- *The funding proposed for such recommended force levels.*

These criticisms prompted Congress to pass the 1994 National Defense Authorization Act that established the Commission on Roles and Missions (CORM). The CORM recommended instituting a defense strategy review every four years. In turn, Congress responded by passing the National Defense Authorization Act for Fiscal Year 1997 (passed in 1996) mandating the first Quadrennial Defense Review (QDR) charged with preparing a "comprehensive examination of the defense strategy, force posture, force modernization plans, infrastructure, budget plans, and other elements of the defense program and policies with a view toward determining and expressing the defense strategy of the United States and establishing a revised defense program through the year 2005."[3]

Because of its doubts about the quality of the traditional defense review process, Congress also authorized the creation of the Nation Defense Panel (NDP), composed of national security experts from the private sector, to perform its own independent critique of the Department of Defense (DoD)-run QDR. The NDP report would include "an independent assessment of a variety of possible force structures of the armed Forces through the year 2010 and beyond."[4]

The 1997 Quadrennial Defense Review

The QDR process formalized the role of the Office of the Secretary of Defense (OSD) as the leading voice in the force transformation process. While it sometimes speaks with many tongues, the OSD's QDR exercises do now represent something approaching a single official position.

The first QDR, however, did not significantly alter the status quo. It called for budget cuts across all services in light of forecast fiscal constraints, but most of these cuts had already been programmed into the existing FYDP and budget. It did not cut any major weapon systems. It described a broad military strategy that called for the US to shape the security environment through deterrence and engagement while remaining prepared for a full spectrum of conflicts, ranging from small-scale contingencies to major theater wars. The report endorsed the National Security Strategy's "shape, respond, prepare" doctrine, Joint Vision 2010's "full spectrum dominance," and the BUR's force-sizing requirements to conduct two simultaneous MTWs.[5] In practice, this was more a recipe for status quo than for change and more a series of ambiguous slogans than a tangible strategic plan.

Congress was unimpressed. It viewed the 1997 QDR as a run-of-the-mill DoD budget exercise that reflected what military force structure would look like if funded at present budget levels. As such, it failed to challenge the status quo by making difficult choices and setting priorities. The congressionally-mandated and independent NDP criticized the QDR for rubber-stamping a Cold War defense structure that did not adequately address asymmetric threats and homeland defense.

The NDP, in contrast, recommended a comprehensive look at scaling back or canceling legacy systems, such as the M1A1 Abrams Tank upgrades, the Crusader artillery vehicle, the Comanche helicopter, and the defense-wide tactical aircraft programs (e.g. the F/A-18E/F, F-22, and JSF). Most significantly, the NDP's report challenged the two major theater war force posture and suggested that while it was a means to justify a Cold War-based force structure, it had become a roadblock to implementing transformation strategies that would prepare the military for future threats.[6]

The 2001 Quadrennial Defense Review

Despite—or perhaps because of—the weak and ambiguous results of the First QDR, the 106th Congress created a permanent requirement for a Quadrennial Defense Review by inserting

Section 118 into Chapter 2 of title 10 of the US Code. This states—in language similar to that of the original 1997 QDR legislation—that every four years, the Secretary of Defense will:[7]

> *…conduct a comprehensive examination of the national defense strategy, force structure, force modernization plans, infrastructure, budget plan, and other elements of the defense program and policies of the United States with a view towards determining and expressing the defense strategy of the United States and establishing a defense program for the next 20 years.*

This legislative requirement again attempted to make the QDR a key element of national security planning that would shape the defense program and budget rather than set vague goals for strategy and force changes. The 1947 National Security Act (50 U.S.C. § 404a(a)) already required the President to submit to Congress a national security strategy along with budgets for each fiscal year that (1) identified US interests, goals, and objectives vital to US national security and (2) explained how the US uses its political, economic, military and other elements of its power to protect and promote US interests and objectives. The QDR, in turn, was to outline a defense strategy that supported and complemented the National Security Strategy.

The National Defense Authorization Act for Fiscal Year 2000 stated that the purpose of the 2001 QDR would be to: (1) delineate a military strategy consistent with the most recent National Security Strategy; (2) define the defense programs to successfully execute the full range of missions assigned the military by that strategy, and (3) identify the budget plan necessary to successfully execute those missions at a low-to-moderate level of risk.

To assist the DoD in formulating a comprehensive military strategy, Congress specifically requested answers to the following questions for the 2001 and future QDRs.

- The results of the review, including a comprehensive discussion of the national defense strategy of the United States and the force structure best suited to implement that strategy at a low-to-moderate level of risk.
- The assumed or defined national security interests of the United States that inform the national defense strategy defined in the review.
- The threats to the assumed or defined national security interests of the United States that were examined for the purposes of the review and the scenarios developed in the examination of those threats.
- The assumptions used in the review, including assumptions relating to: (a) readiness; (b) the cooperation of allies, mission-sharing and benefits and burdens resulting from coalition operations; (c) warning times; (d) levels of engagement in operations other than war and smaller-scale contingencies; and (e) the intensity, duration, and military and political end-states of conflicts and smaller-scale contingencies.
- The effect on the force structure and on readiness for high-intensity combat of preparations for and participation in operations other than war and smaller-scale contingencies.
- The manpower and sustainment policies required under the national defense strategy to support engagement in conflicts lasting longer than 120 days.
- The anticipated roles and missions of the reserve components in the national defense strategy and the strength, capabilities, and equipment necessary to assure that the reserve components can capably discharge those roles and missions.
- The appropriate ratio of combat forces to support forces (commonly referred to as the `tooth-to-tail' ratio) under the national defense strategy, including, in particular, the appropriate number and size of headquarters units and Defense Agencies for that purpose.

- The strategic and tactical air-lift, sea-lift, and ground transportation capabilities required to support the national defense strategy.
- The forward presence, pre-positioning, and other anticipatory deployments necessary under the national defense strategy for conflict deterrence and adequate military response to anticipated conflicts.
- The extent to which resources must be shifted among two or more theaters under the national defense strategy in the event of conflict in such theaters.
- The advisability of revisions to the Unified Command Plan as a result of the national defense strategy.
- The effect on force structure of the use by the armed forces of technologies anticipated to be available for the ensuing 20 years.
- Any other matter the Secretary considers appropriate.

What the Congress did not do was insist that the next QDR exercise be tied to a force plan and procurement plan, to an overall program and Future Year Defense Plan (FYDP), and to a budget that would implement what the QDR recommended. The congressional language was too vague to correct the most obvious and continuing failure in US defense planning: the failure to force the integration of strategy, planning, and budgeting. While its efforts to reform the QDR process were well intentioned, Congress did not force the Secretary of Defense to address the chronic mismatch between strategy, force plans, programs and budgets, and the OSD failed to make any substantive progress in these areas on its own.

The DoD released the 2001 QDR as scheduled on September 30, 2001, less than a month after the September 11th terrorist attacks. The QDR did make conceptual progress in a number of areas and outlined a new defense strategy that encompassed four goals: to assure allies and friends that the US is capable of fulfilling its commitments; to dissuade adversaries from undertaking activities that could threaten US or allied interests; to deter aggression and coercion; and to decisively defeat any adversary if deterrence fails.

The Review also sought to shift the basis for defense planning from the long-standing "threat-based" model, which focused on specific adversaries and geographic regions, to Secretary Rumsfeld's vision for a "capabilities-based" construct that emphasized the need to prepare for a broad spectrum of potential military operations against unknown enemies. The "strategy" of winning two nearly simultaneous major theater wars was largely retained, albeit with some clarification. It did not, however, define what this strategy meant in terms of meaningful changes to the force structure, defense program, and budget.

Secretary Rumsfeld stated that the new QDR was not intended to be a strategy *per se* but a series of goals and priorities for shaping the force structure and sizing the budget. Apart from defending the US and deterring aggression, the new force-sizing construct, called for forces that could:[8]

- Swiftly defeat aggression in overlapping major conflicts while preserving for the President the option to call for a decisive victory in one of those conflicts—including the possibility of regime change or occupation; and
- Conduct a limited number of small-scale contingency operations.

The 2001 QDR identified several steps that the DoD needed to take to achieve the objectives of its new defense strategy but in vague terms, not as force plans, procurement plans, or resource requirements. These steps ranged from exploiting new approaches and operational concepts to

fundamentally changing the way wars are fought. The QDR concluded that the desired transformation objectives could be achieved by exploiting new approaches, technologies, and new organization. The report also described six critical goals to provide focus to the DoD's transformation efforts. These were:[9]

- Protect bases of operation at home and abroad and defeat the threat of CBRNE weapons.
- Assure information systems in the face of attack and conduct effective information operations.
- Project and sustain US forces in distant anti-access and area-denial environments.
- Deny enemies sanctuary by providing persistent surveillance, tracking, and rapid engagement.
- Enhance the capability and survivability of space systems.
- Leverage information technology and innovative concepts to develop Joint C4ISR.

To support these initiatives, the DoD established a transformation office that reported directly to the Secretary of Defense to develop transformation roadmaps for the services and defense agencies. Moreover, the QDR directed the DoD to develop a prototype for a Standing Joint Task Force Headquarters to improve the services' ability to operate together in situations that required a rapid response. And as an added touch, the Review included the Secretary of Defense's plans for improving DoD business practices—reforming its financial systems, reducing the size of headquarters' staffs, and consolidating the DoD's facilities and supply chain—to increase efficiency and free up resources in support of transformation efforts.[10]

In contrast to the 1997 QDR, the 2001 Review was shaped by the sustained involvement of the Secretary of Defense and senior DoD officials who provided the direction and oversight that the 2001 QDR process required to initiate the development of a new defense strategy. This unified leadership provided for a central, coherent vision of a US defense strategy.

However, several weaknesses in the DoD's review process, analysis and reporting limited the report's overall utility as a means for reassessing US defense plans and programs. While Pentagon officials did consider postponing the release of the QDR to review how September 11th should affect future military planning, they opted to complete the report on schedule since they felt that it already addressed issues such as homeland defense, asymmetric threats, and potential terrorist surprises.

The 2001 QDR raised a host of new issues about the strategy and force structure the US should pursue in the future that it failed to resolve in anything other than the vaguest terms. Nevertheless, many experts felt it was a major improvement over the 1997 Review and attributed many of the shortcomings of the 2001 QDR to the compressed timeline in which it was prepared. The Secretary of Defense had delayed starting the review until late spring 2001, after the DoD completed a series of strategic reviews led by outside defense experts. This internal delay compounded the challenge a new Secretary of Defense and a new administration faced in submitting a national security strategy by June and a QDR by September 30 of the first year in office.

On the whole, the 2001 QDR's focus on the defense policy goals discussed earlier—assuring allies and friends; deterring threats and coercion against US interests; if deterrence fails, decisively defeating any adversary—was clearly aimed at dealing with wars between traditional nation-states or coalitions. The Review did not explore how any of the stated defense policy goals might apply to global terrorism and many aspects of asymmetric warfare, counterinsurgency, peacemaking, and nation building.

As explained in a November 2002 report by the General Accounting Office:[11]

> *Because the study's principal guidance document was designed to emphasize the Secretary's priorities, there was not always a clear link between the specific reporting requirements in the legislation and the issues assigned to study teams for analysis. Moreover, the thoroughness of the department's analysis and reporting on issues mandated by legislation varied considerably, and some significant issues such as the role of the reserves, were deferred to follow-on studies. Finally, the department's assessment of force structure requirements had some significant limitations—such as its lack of focus on longer-term threats and requirements for critical support capabilities—and the department's report provided little information on some required issues, such as the specific assumptions used in the analysis.*

While the 2001 QDR did describe the importance of transformation efforts for dealing with asymmetric and terrorist threats, it offered scant direction on how the services might prevent or respond to so-called fourth-generation warfare attacks like those of September 11, 2001. It did little to describe major changes in US force structures and procurement plans and only had limited impact on the budget and the FYDP.

For example, the Review stated that the terrorist threat required a faster transformation in forces and operational concepts to address new threats but offered no changes to the size, composition, or training of military forces. The report did not offer a timeline for making the transformational changes nor did it describe them in detail. The QDR's section on research and development also discussed needs regarding homeland defense but focused almost exclusively on defense against ballistic and cruise missiles and on managing the aftermath of terrorist attacks on US soil.[12]

The Potential of the 2006 QDR

The failure of previous QDRs to shape US force plans and defense spending plans and to create a match between these goals and actual resources was not corrected in the 2006 Quadrennial Defense Review. The 2006 QDR exercise was supposed to find ways to carry out a longer-term and far more comprehensive restructuring of US strategy, force posture, and force development plans. Accordingly, the 2006 QDR could have had more impact than previous Reviews for several reasons: (1) it was the first wartime QDR; (2) it was the first QDR completed by a Secretary of Defense who had completed a QDR before; (3) this QDR was the first to be completed as budgets were consistently growing; and (4) this was the first post-9/11 QDR.[13] Moreover, Secretary Rumsfeld had four years to pick senior military officials who subscribed to his philosophy of defense transformation and fighting with smaller, more agile forces.[14]

The terms of reference for the FY 2006 QDR were promising. They looked beyond conventional warfare. They called for the development of a new force posture that relied on a four-way threat matrix that reflected the decline in the likelihood of conventional warfare and Secretary Rumsfeld's intention to counter the concurrent rise in unconventional warfare by shifting from a threats-based force to a capabilities-based force. The matrix, as defined by the March 2005 National Defense Strategy, contained the following threat components:

- Traditional threats: state-based conventional forces.
- Irregular threats: terrorism, insurgency, and civil conflict.
- Disruptive threats: that disrupt US operations; electronic warfare, WMD attacks.
- Catastrophic threats: proliferation and attacks on symbols and centers of US power.

The Secretary of Defense also identified four core problems, closely related to the threat matrix, that the QDR must address.[15]

- Partnerships with failing states to combat terrorist threats: The US has an interest in maintaining a well-managed international system. This interest may push the US to engage in elective military interventions.
- Defense of the homeland, including offensive strikes against terrorist groups: The US must be prepared to engage terrorists around the world to prevent domestic attacks.
- Influencing the strategic choices of major countries: Trying to determine the number and type of military forces for this task is difficult.
- Preventing the proliferation of WMD: This is the one likely war-fighting issue that could require regime change operations.

At the same time, three other critical aspects of transformation were supposed to receive attention. These included a long overdue reexamination of the role of the National Guard and Reserves, an examination of basing and infrastructure, and a look at the role that civilians should play in stability and nation building operations to reduce the reliance on the military for what are essentially civilian functions.

The 2006 QDR failed to deal with any of these issues. Its transformation efforts were conducted in the face of major budget and cost constraints, serious problems in the existing transformation plans of the individual services, and critical problems in virtually every major procurement program.

The US also faced the problems of dealing with the ongoing Iraq War and with the reality that large-scale transformation could only pay off fully in the 2010 timeframe at the earliest. Barring a half-decade of almost perfect peace—the lead time needed to execute actual force transformation—transformation could only be effective if it addressed the fact that the US could not correct its current "overstretch" problems in the near to medium-term with anything like the resources being projected for US defense spending. This was particularly true given the way that the DoD had failed to manage and execute its major procurement programs.

Moreover, the Pentagon chose to repeat a decades-long history of drafting conceptual studies and strategies that were not tied firmly to specific force plans and levels, and which were not then implemented in detail in its budgets, future year defense spending plans, procurement plans, manpower plans, readiness plans, or deployment plans. The DoD ignored the fact that exercises like the QDR have almost inevitably become ineffective intellectual efforts because they have not been tied to concrete, detailed execution. In fact, the entire history of the Department of Defense is a grim warning that theory and policy do not change practices unless they are concretely tied to specific levels of forces, manpower, and dollars.

The Reality of the 2006 QDR

The 2006 QDR was released in February 2006. It did make advances at the conceptual level. It called for a significant shift in DoD policy and planning from an emphasis on fighting conventional, major theater wars against nation states to fighting a "long war" against terrorism and nontraditional threats and defending the homeland. Where the 2001 QDR largely retained the two major theater war construct, the 2006 Review accounted for the possibility that one of those two campaigns would be a large-scale, prolonged and unconventional conflict. It said that the US must have the surge capability to "wage two nearly simultaneous conventional campaigns (or one conventional campaign if already engaged in a large-scale, long-duration irregular campaign), while selectively reinforcing deterrence against opportunistic acts of aggression."[16]

The QDR highlighted the risk that the US might have to fight major conventional conflicts and deal with proliferation. The 2006 Review also focused on the risks posed by rogue, and possibly

nuclear, states (like Iran and North Korea), monitoring the rise of a heavily-armed rival (like China), and the DoD's domestic role in responding to natural disasters like Hurricane Katrina. The strategy document also called for new investments aimed at countering the proliferation of biological and nuclear weapons, such as teams able to defuse a nuclear bomb.

To accommodate the DoD's newfound role in stability, security, and transition operations—and in response to tough lessons learned in Iraq and Afghanistan—the QDR highlighted and reinforced a November 28, 2005 DoD Directive that gave stability and peacekeeping operations the same priority as major combat operations within the Department.[17] Moreover, the 2006 Review recognized the need for improved interagency relations and more effective cooperation with foreign allies to continue the long war against terrorism.

The 2006 QDR also set several broad priorities for realigning the DoD's resources to support its new strategic initiatives, although some of these were reflected more clearly reflected in the FY 2007 budget submission and FYDP.

- Increase Special Operations Forces (SOF) by 15 percent, including a third more Army Special Forces battalions, a 2600-person Marine component in Special Operations Command (SOCOM), more Navy SEAL capacity and a new SOCOM UAV squadron.
  - Improve language skills and cultural awareness.
  - Train foreign military units.
- Expand psychological warfare and civil affairs units by 3500 personnel (an increase of one third) and enhance the capability of the Army and the Marines to perform SOF missions.
- Field by 2018, rather than 2037, "a new land-based, penetrating long-range strike capability."
- Accelerate procurement of Predator and Global Hawk UAVs to provide almost double the current UAV coverage.
- Accelerate procurement of Littoral Combat Ships and develop a Navy riverine capability.
- Field within two years a conventional ballistic missile on Trident submarines for conventional prompt global strike.
- Mount a $1.5 billion initiative to develop broad-spectrum medical countermeasures against the threat of genetically engineered bio-terror agents.

This marked at least a limited shift away from the DoD's previous focus on vague transformation plans that bore little connection to DoD budgets. The 2006 QDR was, however, anything but an adequate response to the new direction the Department had received from Congress. The Bob Stump Defense Authorization Act for Fiscal Year 2003 amended the QDR mandate in the US Code (10 U.S.C. § 118(d)) to allow the completion date of the Review to coincide with the President's budget submission. The Congress intended this legislative change to make the Review's delivery and implementation more efficient and to bridge the usual gulf between strategic defense planning and budgeting.

In the spirit of the amended QDR legislation, the DoD did "front load" a limited number of initiatives into the $439.3 billion defense budget submission for FY2007.

- Increasing SOF by 15 percent corresponded to a $1 billion budget increase in commando forces—Green Berets, Navy SEALs, and Delta Forces—across the board to $5.1 billion.
- Improving foreign language and cultural training programs translated into a $181 billion budget allocation.
- Accelerating the procurement of UAVs connected to $1.7 billion slated for 322 more UAVs.[18]

- Strengthening US homeland defense was linked to $1.7 billion to develop new vaccines against biological weapons and to increase the military's ability to locate and neutralize potential nuclear threats.[19]

Nonetheless, many experts had expected the QDR, and Secretary Rumsfeld, to be far more decisive and explicit in making hard choices about cutting big-ticket defense programs. For example, the Army's Future Combat System (FCS), designed to seamlessly link soldiers and weapon systems in the battlefield, alone cost $150 billion. The Navy's DD(X) destroyer, an impressive land-attack vessel with limited utility in irregular warfare, cost around $2.5 billion per hull. And the Air Force's F-22 fighter, designed originally as an air superiority platform for waging conventional wars, cost $61.3 billion. Moreover, the proposed acceleration, by nearly two decades, of acquiring a new (manned or unmanned) deep strike aircraft comprised a significant new liability.

Both the new QDR and the FY2007 budget submission that accompanied it made little more than token progress in creating credible force and procurement plans, and in ending the gap between strategy and reality and between plans and resources. The few cuts the 2006 Review did recommend were relatively small. Programs slated to be scaled back or terminated included the Joint Unmanned Combat Air Systems (J-UCAS) effort, the E-10 surveillance aircraft, and the B-52H standoff jammer. The QDR also recommended cutting 40,000 Air Force personnel, retiring 50 Minuteman ICBMs, and accelerating the retirement of the F-117 fighter and the U-2 reconnaissance aircraft.

But the 2006 QDR's limited discussion of proposed reductions in force structure and personnel did not substantially alleviate the DoD's mismatch between defense strategy and the budget, nor did the QDR and budget submission propose cuts that offset the burden associated with new programs proposed in the Review. As Steven Kosiak, the director of budget studies at the Center for Strategic and Budgetary Assessments, wrote, "some of the proposed shifts in priorities—such as the accelerated fielding of a new long-range strike aircraft—are likely to be dependent, for their implementation, on the willingness and ability of a future administration to make offsetting cuts in other DoD priorities. The [2006] QDR, for the most part, deferred these difficult choices."[20]

The 2006 QDR also failed to make substantive recommendations regarding several key areas. The Review did not propose a forward-looking approach to homeland security operations in the wake of Hurricane Katrina. Nor did it address the new role of the National Guard and Reserves in transforming the DoD. The QDR's recommendations on acquisition reform fell well short of congressional expectations, and the Review provided no guidance on the role civilians should play versus soldiers in stability and nation building operations.

The most glaring flaw of the 2006 QDR was that it called for the DoD to have its cake and eat it too. Presumably, US force structure had to be realigned to counter the irregular and asymmetric threats posed by international terrorist networks, failed states, and the proliferation of weapons of mass destruction. But this realignment could only take place through a far more dramatic shift in resources away from expensive Cold War-era weapon systems designed for conventional deterrence and major theater wars. Instead, the 2006 QDR and the FY2007 budget request preserved every major weapons system and simply added projects to deal with the new challenges without calling for an increase in the number troops.

Stephen Biddle of the Council on Foreign Relations summarized the result as follows:[21]

> *Back when the QDR process started for this round, people tended to frame the thing up as a fundamental choice about what sort of military we wanted to have in the future. Was the Secretary*

> *of Defense going to retain the high-tech, capital intensive, speed-oriented transformation concept intended primarily for waging major combat operations or for dealing with potentially emerging peer competitors, or was he going to go to a lower-tech, labor-intensive, lower capital military with an emphasis on persistence oriented towards low intensity conflict, counterinsurgencies of the kind we're waging in Iraq and Afghanistan, counterterrorism, and other lower intensity challenges?...The great irony of the QDR that we got, of course, is that they decided to do both. Why choose? So none of the trade-offs embodied in that fundamental choice have been drawn. Instead, the document basically tries to do everything involved with both of those futures and build both of those militaries.*

In short, the QDR had some successes in theory but failed to deal with practice. It simply did not make enough tough decisions about defense planning. Secretary Rumsfeld was one of the most powerful defense secretaries in recent memory; he devoted significant resources to completing the 2006 Review—it was drafted over 10 months by 500 Pentagon employees—and he staunchly advocated the need for smaller, more agile and more lethal forces.[22] Although the 2006 Review made a significant policy departure from previous Reviews by fully embracing transformation strategies to conduct irregular and counterterrorist warfare, it made no proportional cuts in conventional forces to adequately fund these new strategies.

Joint Forces and the Impact of the Joint Chiefs

The problems raised by the QDR are only part of the challenges in creating strategies and force plans that can be transformed into affordable realities. The Joint Chiefs and each of the military services have also advanced strategic concepts, and sometimes force plans, that have compounded the problem of bringing strategy and force transformation into balance with resources. In the case of the Joint Chiefs, the problems have been focused on how to integrate the efforts of the different military services and commands into an effective post-Cold War force structure based on jointness.

"Jointness" and the "joint force" have meant different things in various documents over the past decade. In general, however, the word "jointness" and the phrase "joint force" refer to the coordination between any of the US service branches or any US departments or agencies to seamlessly support each other in conducting operations. Neither jointness nor joint force will refer to operations involving US and multinational forces.

Creating the Joint Force

The constant changes in the post-Cold War security environment have created a world that requires the combined efforts of US forces to deal effectively with terrorist groups, failed states, stability and reconstruction operations, and homeland security in ways that cannot be assigned to individual services or to major unified and specified commands. The need to transform the military into a joint force capable of operating as a coherent whole has come to shape all US military transformation programs. It is clear from the Balkans, the Gulf War, Afghanistan, the Iraq War, and US contingency planning for other conflicts that the US requires a joint force that can achieve operational unity of effort across the range of service competencies. While Congress and the DoD have actively pursued doctrinal changes that emphasize joint forces, implementing these changes has been more problematic.

Congress and defense officials alike have focused on the concept of "jointness" in military operations since the passage of the Goldwater-Nichols Act in 1986 streamlined the US military's command structure. A decade later, the independent Commission on Roles and Missions of the Armed Forces (CORM), established by the National Defense Authorization Act for FY 1994,

released a report titled *Directions for Defense* (1996) that challenged the DoD to move beyond the provisions of Goldwater-Nichols and prepare for the post-Cold War security environment.[23] The report made more than 100 specific recommendations and argued that the terms of the roles and missions debate should focus on the needs of the commanders-in-chief (CINCs), on the capability of their forces to carry out joint operations, and on many of the DoD's support activities—not on the capabilities of the individual Services. The competition between the near-term visions of the unified commands, CINC visions reflecting diverse regional interests, and service visions indicating their specialized mediums led CORM to recommend that the Chairman of the Joint Chiefs of Staff articulate a unified vision for joint operations.

The CORM report's recommendations led the Joint Chiefs to release *Joint Vision 2010* (JV 2010) in 1996. This report marked the Joint Chiefs' first major effort to provide a comprehensive post-Cold War strategy for US force development. As former Chairman of the Joint Chiefs of Staff General John M. Shalikashvili wrote in the Introduction, JV 2010 "is the conceptual template for how we will channel the vitality of our people and leverage technological opportunities to achieve new levels of effectiveness in joint warfighting."[24] JV 2010 detailed a proposed transformational blueprint for the DoD, emphasizing "full spectrum dominance." Its goal was for US forces, operating alone or with allies, to be able to defeat any adversary and control any situation across the range of military operations, from humanitarian and peace operations to full-scale war.

Significantly, JV 2010 and subsequent joint planning documents (including the 2006 QDR) focused on broad calls for force-wide capabilities rather than on individual services. To accommodate this shift, the 2006 QDR recommended that the Pentagon plan, program, and budget according to joint capability areas and outcomes instead of dividing by and emphasizing individual services. Service core competencies would be assessed through what they brought to the joint fight. As such, the success of JV 2010 (and subsequent joint strategy documents) depended on the ability to truly integrate all of the elements of the total force.

Four capabilities lay at the heart of "full spectrum dominance."[25]

- *Dominant maneuver* seeks to control the entire range of the battlespace and the pace of operations through the multidimensional application of information, engagement, and mobility capabilities to achieve a decisive advantage.
- *Precision Engagement* consists of a system of systems that enables forces to locate an objective or target, provide responsive command and control, generate the desired effect, assess the level of success, and retain the flexibility to reengage with precision when required. Precision engagement will build on current US advantages in delivery accuracy and low observable technologies.
- *Full Dimension Protection* aims to control the battlespace so that forces are not just protected but control the environment and initiative in all operations. This means that forces can maintain freedom of action during deployment, maneuver, and engagement, while providing multi-layered defenses for forces and facilities at all levels.
- *Focused Logistics* under girds all of the preceding capabilities because the latter rely on the ability to project power with the most capable forces, at the decisive time and place. Focused logistics optimize the previous three capabilities by fusing information, logistics, and transportation technologies to provide rapid crisis response, to track and shift assets even while en route, and to deliver tailored logistics packages and sustainment directly at the strategic, operational, and tactical levels.

JV 2010 stated that realizing these capabilities required the application and development of two enabling concepts—"innovation" and "information superiority"—to fully enable the tailored application of joint combat power. The first of these, "innovation," meant the "combination of

new things with new ways to carry out tasks."[26] Information superiority was defined as "the capability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same."[27]

Advances in technology lay at the core of both of these force enablers. JV 2010 emphasized technology and "information dominance" for command and control systems as keys to future warfighting. Full spectrum dominance required the services to work together in unprecedented ways, and exploiting US strength in information technology was central to coordinating these "joint forces." Specifically, JV 2010 foresaw a future where technology allowed battlefield decision-making to have far more information at every level and where technology accelerated battlefield operations through information superiority.

What JV 2010 did not provide, however, was a clear force plan, implementing plans and programs, or any vision of how the required resources compared with available budgets. It came close to calling for jointness without trade-offs, and transparent, near real-time situational awareness without examining when and how the required technology could be provided and paid for. Like the various QDRs and the discussions of the "revolution in military affairs," it was more a wish list than a plan. Moreover, given its timing, it emphasized conventional warfighting and reacted more to the lessons of the Gulf War in 1991 than to the emerging need to deal with asymmetric war, terrorism, peacemaking, and homeland defense.

The Joint Chiefs have not improved the realism and relevance of their planning efforts since JV 2010. Former Chairman of the Joint Chiefs of Staff, Army General Henry Shelton, updated and extended the concepts laid out in JV 2010 with the release of *Joint Vision 2020* (JV 2020) on May 30, 2000. JV 2020 reinforced the importance of building the joint force.[28]

> *The joint force, because of its flexibility and responsiveness, will remain the key to operational success in the future. The integration of core competencies provided by the individual Services is essential to the joint team, and the employment of the capabilities of the Total Force (active, reserve, guard, and civilian members) increases the options for the commander and complicates the choices of our opponents. To build the most effective force for 2020, we must be fully joint: intellectually, operationally, organizationally, doctrinally, and technically.*

The transformation strategy outlined in JV 2020—and reiterated later in the 2005 Capstone Concept for Joint Operations (CCJO)—again called for integrating the operational capabilities of US forces across the services, especially in the realm of communications, and for improving US capacity for command and control in multinational operations.[29] To achieve these goals, both vision documents emphasized technology as the primary driver behind future warfighting.

While these strategy documents did not provide clear force plans and priorities, they did impact transformation efforts across the armed forces and provided the foundation and justification for various modernization programs including Future Combat Systems, Network Centric Warfare, Sea Power 21, and Advanced Close Air Support Systems.

The strategy documents also helped shape USJFCOM's proposed framework for future campaigns, "Rapid Decisive Operations" (RDO) released in 2001.[30] The RDO attempted to shift the US away from engaging in the predictable ways of past conflicts that involved phased deployment, staging, taking airfields and ports, moving progressively to key targets, and taking momentary operational pauses to regroup. Instead, rapid decisive operations would be characterized by immediate, simultaneous, unpredictable, and nonlinear attack. The RDO called for a synchronized application of the full range of capabilities across the width and depth of the battlefield to overwhelm an enemy. This mode of warfare requires a truly joint and integrated force with clear communications, collaborative planning, and integrated attack capabilities.[31]

Progress in Joint Warfighting

Like the QDRs and the Joint Vision documents, the RDO called for major advances in strategy and capability almost all of which had great potential value. Once again, however, problems lay in realizing affordable and effective implementation and in transforming broad goals into effective action. Joint doctrine has provided the impetus for change; joint command centers have been established; joint training exercises have become the norm. But the tenets of jointness have not yet permeated all levels of the services.

The military has made major progress in establishing a joint command structure. Consistent with United States Atlantic Command's (USACOM) prominent post-Goldwater-Nichols role in leading joint forces transformation—in 1993, USACOM was assigned the service integrating the roles of Joint Force Provider, Joint Force Trainer, and Joint Force Integrator—USACOM was renamed United States Joint Forces Command (USJFCOM) in October 1999. Since then, as chief advocate for jointness, USJFCOM has facilitated the transformation of the military through joint concept development and experimentation, recommending joint requirements, advancing interoperability, conducting joint training, simulation, and modeling, and preparing battle-ready joint forces.[32]

The Joint Capability Integration and Development System (JCIDS)—which replaced the old Requirements Generation System in June 2003—now supports the Chairman of the Joint Chiefs of Staff (CJCS) and the Joint Requirements Oversight Council (JROC) in identifying, assessing, and prioritizing joint military capabilities. It has scarcely reshaped US force plans and programs into an affordable plan for force transformation, but the JCIDS provides an overarching evaluation mechanism that links joint concepts, the capabilities required to execute those concepts, and the systems ultimately required to deliver those capabilities. Moreover, JCIDS has expanded its list of organizations beyond the scope of the traditional service branches of the Joint Staff. JCIDS now includes representatives from the Office of the Secretary of Defense, the combatant commanders, defense agencies, the intelligence and acquisition communities, and interagency personnel where appropriate. In theory, the documents produced by JCIDS provide the formal communication of capabilities required between the warfighter and the acquisition, test and evaluation, and resource management communities.[33]

Vice Chairman of the Joint Chiefs of Staff and former Commander of USJFCOM Admiral Edmund P. Giambastiani, Jr. highlighted several key areas where "significant" joint transformation progress had been made in a statement to Congress in June 2005.[34]

- Every major DoD wargame since May 2003 has been run as a joint game cosponsored by a service and Joint Forces Command, working on a common set of issues within a common joint context.
- Joint Training has focused on preparing the Joint Task Force Commander and his staff to execute real world joint operations, with a special emphasis on mission rehearsal exercises for commanders preparing for command in Operations Enduring Freedom and Iraqi Freedom.
- More new flag and general officer have been trained in an expanded CAPSTONE Joint Operations Module (JOM). The newly created Joint Task Force Headquarters offers training courses for 2- and 3-star officers and senior enlisted leaders.
- Using the Joint Battle Management Command and Control authorities as directed by the Deputy Secretary of Defense, the Services and Combatant Commands have improved all aspects of Joint Command and Control, issued a detailed Roadmap, and executed their first program, the Deployable Joint Command and Control. USJFCOM has also created the Joint Systems Integration Command (JSIC).

Fully implementing "jointness" may well take another decade. It not only requires major new capabilities and advances in force transformation, but advances in military training and operational practice. The following anecdotes illustrate the gap between rhetoric and performance.

- In 1998, a prospective Navy battle group (including the Hue City (CG 69) and the Vicksburg (CG 66)) was replaced because the assembled ships were not interoperable. The new Aegis cruiser, with the latest state-of-the-art systems, could not communicate reliably with the older systems due to poor configuration management and the failure to backfit. Here, the Navy could not communicate with itself, let alone with other services or allies.[35]

- In 1999, the Task Force Hawk deployment to Kosovo exposed a number of problems, including the substantial logistical issues and delays in operational readiness. Molding the Army's AH-64 Apache attack helicopters into the primarily Air Force-driven air campaign was exceedingly difficult due both to command failures and technical failures. In effect, the Army and the Air Force could not work together in the theater.[36] Admiral William Owens recounted the situation.[37]

  > *The Apaches were unable to integrate with support assets such as the E-8 JSTARS aircraft, the EC-130 Compass Call (radar) jamming aircraft and the F-16CJs equipped to defeat Serbian air defenses...Sixteen years after Grenada—during which Army ground troops found themselves unable to communicate with Navy carrier aircraft providing critical close-air support on the battlefield—the Army and Air Force assets rushed to Kosovo still could not communicate with one another...No one has ever seriously envisioned including Army aviation into a theater strategic air campaign. Everybody trains, organizes, and equips to their service doctrine...When the services come to a war, they come with their service doctrines, not a joint doctrine.*

- In March 2002, Operation Anaconda in Afghanistan's Shahikot Valley suffered from major command and control and logistical issues. As Army Major Mark Davis discussed at length in a master's thesis completed at the School of Advanced Air and Space Studies at Maxwell Air Force Base, a "sloppy" chain of command made combat failures almost inevitable from the start. Former US CENTCOM Chief Army General Tommy Franks, who served as the unified commander of all operations in Afghanistan, created an overly complex command structure that established numerous joint task forces and functional commands whose responsibilities could easily overlap.

  - Two special operations task forces—code-named Dagger and K-Bar—were put in a position where they could be potentially tasked simultaneously by three different commands: General Franks at CENTCOM, the Combined Forces Special Operations Component Commander, and the Combined Forces Land Component Commander.[38]

  - As the Combined Forces Land Component Commander, Army Lt. General Paul Mikolashek became the lead general in Afghanistan, and theoretically, his tactical control extended to all SOF—except for those in Task Force Sword, an elite unit from Fort Bragg, NC that undertook missions so classified that other task forces were often unaware of them. This made for competing commands between Lt. Gen. Mikolashek and the Commander of all of CENTCOM's acknowledged SOF, Navy SEAL Rear Admiral Albert Calland. Because Mikolashek could not direct SOF outside the limits of his original tasking unless Gen. Franks or Rear Adm. Calland approved, Mikolashek was often unaware of mission orders Calland issued. This placed enormous pressure and responsibility on commanders directly responsible for individual special operations units like Colonel John Mulholland, commander of Task Force Dagger.[39]

  - As a result partially of the serpentine decision-making apparatus and of time constraints, Operation Anaconda did not have a clear-cut, streamlined joint fire control network for close air support. CENTCOM had dedicated most frequency bandwidth for satellite communications to SOF, given their lead role in the opening months of the campaign. As a result, air controllers had only a single frequency on which to coordinate target bombing close to friendly forces. Needless to say, by the second day of the operation, this single frequency was totally inadequate to control the amount of close air support needed for the operation.[40]

> At the heart of the controversy behind Operation Anaconda, however, lay a serious breakdown in direct communication between the commanding officers and a lack of coordination and cooperation between the services.

- At several points during Operation Iraqi Freedom, from March through May 2003, top combat commanders experienced significant difficulties in sharing information across defense installations and coordinating joint fires operations. For example, on March 27, an unmanned aerial vehicle identified two "time-sensitive targets" and the close air support pilot could not engage due to weather. Then, without informing Coalition Force Land Component Command (CFLCC) to deconflict the airspace, the V Corp artillery commander fired three Army Tactical Missile Systems (ATACMS) and only subsequently informed CFLCC. A second incident occurred on April 2, when V Corps devised and then cancelled a mission to suppress Iraqi air defenses using the 1st Battalion of the 27th Field Artillery Brigade. But V Corp never coordinated the cancellation with CFLCC headquarters. Consequently, the field artillery unit mistakenly launched five ATACMS, having already set a "time on target" for the missiles.[41] A June 2003 study by the National Defense Industrial Association has since emphasized the need to establish joint fires deconfliction guidelines across the services.[42]

While these isolated incidents help illustrate the disjunction between high level planning and operations in the field, the lag in realizing true jointness has also been delayed by an overly bureaucratic and procedurally focused process. In a December 2005 e-mail memo to the Joint Staff—subsequently published in *Inside the Navy*—Lt. General (Ret.) Paul Van Riper contrasted the development of military doctrine by Admiral Stansfield Turner, and Generals Donn Starry and Al Gray during the 1970s and 1980s with the development of joint doctrine today.[43]

> *Admiral Turner, and Generals Starry and Gray focused on specific problems. This is not surprising for a truly useful military operating concept only results when there is a need to solve a significant problem or through recognition that an opportunity exists to perform some military function better or in a new way....For this reason alone, recent claims of a "revolution in military affairs" or a "military transformation" ring hollow since there is little to suggest these movements were undertaken to solve clearly identified military problems. Merely to be "transformational" does not qualify as a specific military problem. Mostly, the names of the movements now serve as a mantra for those advocating advanced technologies...*

Van Riper argued that the new operating concepts expressed in the 1982 and 1986 editions of Field Manual 100-5, *Operations*, and in a 1989 edition of Fleet Marine Force Field Manual 1, *Warfighting*, fundamentally changed the respective services' approaches to war, but that they did not rely on staffs or task forces. They were the products of a few innovative authors supervised by senior leaders.

> *After each service promulgated a manual describing its operating concept, no one perceived a need to produce a vast hierarchy of supporting concepts offering increasing specificity. One document "drove" changes in doctrine, organization, material, and training and education throughout each service. Senior leaders expected combat developers, informed by their understanding of war, to exercise considerable judgment in their duties. They could* not *anticipate additional and more detailed concepts to justify directly their every programmatic decision.*
>
> *In contrast, today, we see the creation of an overabundance of joint concepts—a Capstone Concept for Joint Operations, four operating concepts, eight functional concepts, and nine integrating concepts with more reportedly under development. Further, some plans I have seen call for the revision of these documents on a regular two-year cycle...Rather than a method to drive change, the joint concepts seem to serve more as a means to slow innovation. Services, agencies, and even individuals claim they need ever-increasing detail before they can proceed with force development.*[44]

Technology Centric versus Human Centric

From a programmatic and resource perspective, the new joint forces doctrine also suffered from an overemphasis on technology over personnel. The "downside" of the stunning success of

advanced weaponry during the 1991 Gulf War was that it helped lead to an emphasis on the role of technology as the primary driver for achieving joint forces transformation. JV 2010 and JV 2020 focused on the application of command and control technologies as they relate to supporting the four operational concepts. But neither JV 2010 nor JV 2020 created concrete force structures, programs, and resource plans to give US forces the level of information dominance that was the foundation of the "joint vision." As Colonel Thomas X. Hammes, USMC wrote about JV 2010:[45]

> *A cynic might say that the failure to address the issue of information dominance is a bit like the failure to critique the emperor's new clothes. Everyone knows there is not much there but is reluctant to address the issue. A genuine discussion of "information dominance" requires trying to understand and predict the complicated, increasingly fragmented, all-too-human real world.*
>
> *Because JV 2010 clearly prefers technology to people, it is a bit awkward to address the fact that information collection against today's threats requires investment in human skills rather than technology. In fact, a serious discussion of achieving information dominance might reveal its implausibility, as evidenced by our lack of understanding of the situation in Iraq and Afghanistan and our inability to come to grips with the worldwide al-Qaeda network. An honest evaluation of our demonstrated inability to achieve information dominance would invalidate the entire concept of full-spectrum dominance that lies at the heart of JV 2010.*

The recommendations in the 2006 QDR to increase language and cultural awareness training, and to expand special forces did focus on developing the human element behind the technology. But the payoff in the field from investments in these education programs may not materialize for a decade or more, and the FY2007 budget submission still placed much more emphasis on technology than on human factors.

Like other strategic goals, "jointness" only has meaning in practice. The challenge lies in creating an adaptive, flexible integrated and multi-dimensional fighting force out of an organization built on hierarchy, control, stability, career predictability, command and service separatism.[46] In practice, implementing joint doctrine remains difficult because the individual services are reluctant to give up their power. The Defense Science Board 2005 Summer Study on Transformation: A Progress Assessment Volume I, released February 2006, discussed these problems in a broad context that provided a critical warning about the need for "jointness" at every level of force transformation.

- *The current approach to concepts development is too cumbersome, takes too long, and requires too much consensus building to be useful in driving the needed change;*
- *JCIDS, rather than strengthening the influence of joint needs, submerges them in a sea of force provider interests. Capability based planning is not widely understood and is sometimes used to justify the progress in programs that are not meeting even known needs;*
- *JCD&E [Joint Concept Development and Experimentation] is not informing force development;*
- *Capability based planning is not widely understood; and*
- *Resource allocation continues to be dominated by the Force Providers and the Joint Staff.*

The DSB also described the JCIDS, the organization designed to monitor the progress of joint transformation as "so unwieldy as to make it ineffective in its intended purpose of focusing on key challenges faced by the warfighers in integrating and employing joint forces."[47]

The Army's Force Transformation

Perhaps because the QDR and Joint Vision documents were so general, much of the detailed planning of US strategy and force plans has taken place at the service level. The US Army has

shaped many aspects of its own force transformation to deal with problems of "overstretch," and no service has come under more immediate pressure as a result of the Iraq War than the Army. Although the Air Force and Marine Corps have experienced serious stress and Navy carrier and aviator forces have come under pressure, the downsizing of the military after the end of the Cold War left the Army more unprepared for the level of strain placed upon it by the simultaneous wars in Iraq and Afghanistan than the other services.

The Army's Chief of Staff, Lt. General Schoomaker, reacted to these strains on the Army by ordering force structure changes in August 2003. He created four new brigades that would allow the force to be more capable of enduring extended deployments during multiple combat operations, while also improving deployment speed.

The Army is now seeking to create more brigades and implement major force changes through 2006-2007, completing them by 2009 at the latest. These transformation plans depend heavily on the development of two related concepts of operations: Future Combat Systems (FCS) and Force Modularity.

- The Future Combat Systems program encompasses a joint transformation and modernization effort across all American military services that focuses on networking weapons and systems to create lighter, more agile, and capable forces. The backbone of FCS consists of 18 manned and unmanned ground vehicles, air vehicles, sensors, and munitions connected by a communications network linked to the soldier. In effect, the goal of FCS is to plug the soldier into a vast information network via various sensors and platforms to provide him access to data and give him a more accurate picture of his surroundings.

- On December 23, 2004, the DoD's Program Budget Decision (PBD) 753 directed "the Army to submit to the Deputy Secretary of Defense by April 1, 2005, an executable plan that rationalizes and integrates its Future Combat System (FCS) and modularity programs." Thus, in April 2005, the Army formally linked the FCS program with the Army Modular Force Initiative to create a Future Combat Force Strategy that established a framework for the continuous progression of the current modular force into the future one.[48] The Modular Force Initiative program was designed to increase the number and deployability of the Army's combat brigades. The Future Combat Force Strategy simply combines efforts to modernize the force (FCS) with efforts to make the force more flexible (modularity).[49]

General Schoomaker's transformation plan called for:[50]

- Reorganizing the forces into modular combat and support brigades, thereby creating more flexible divisions. The divisions would take on a new structure because the modular combat and support brigades will plug into the division in differing ratios and numbers depending on the mission – called plug and play combat power, which is similar to the Marine Corps' expeditionary units. Modularity is costly and will compete with FCS, equipment recapitalization, and increases in end strength in the Army budget.[51]

- Converting 33 medium sized brigades designed for division-centric, conventional warfare into between 43-48 lighter, smaller, independent brigade teams with much more modular structures and less dependence on support infrastructure. The goal is to create 10 more brigades with roughly the same manpower and budget resources that can be deployed for six months with 18 months rotation versus brigades/divisions for 12-15 months with 12 months rotation.

- Standardizing Units of Action or combat brigades according to their weight classification: lightweight, medium, or heavy.

- Increasing the Army is increasing its end strength by 30,000 in order to facilitate the force transformation. This is a temporary build-up and by 2011 the Army should have eliminated 30,000 other positions.

- Reorganizing the role of 100,000 personnel in active and reserve forces and transferring support unit duties from the reserves to the active army.

Key aspects of these plans involved a major reorganization of all Army, Army National Guard (ARNG), and US Army Reserve (USAR) forces into modular brigade combat teams. The units

were intended to be smaller, more agile and deployable, more lethal, and more self-sustaining—in most instances equipped with artillery and reconnaissance assets previously administered at the division level.

The Army's plan called for manning each modular brigade with one-third fewer subordinate combat units than traditional brigades, while adding additional support units to make the brigades more independently deployable. Because of stresses on the force, Defense Secretary Rumsfeld temporarily authorized an increase in end strength of 30,000 to meet the transformational requirements of the new modular brigades.

In practice, however, the Army's plans quickly collided with reality, and provide a case study in the dangers of gaps between strategy, force plans, programs, and budgets. As of March 2005, the expected costs of the "modularization" program for FY2005-FY2011 increased by 71% to $48 billion from the Army's 2004 estimate of $28 billion. The DOD's request for fiscal year 2005 supplemental funds included $5 billion for modularity.

The Army planned for another $5 billion to be funded from fiscal year 2006 supplemental funds and the remaining $38 billion from DOD's annual appropriation from fiscal years 2006 through 2011. A March 2005 GAO report cautioned, however, that the costs of modularization might be further revised upward and that the Army's proposed modularization costs did not include all potential costs associated with fully equipping the planned brigades. Nor did the Army's plan account for costs associated with the possibility of increasing the number or changing the design of modular brigades.[52]

Many associated costs remained uncertain. The Army could not fully estimate the facility costs of modularization until the DoD determined its base closures and base repositioning overseas, among other decisions. When the Army tried to update its cost estimates for the program, the GAO reported that it could not fully evaluate the new estimates because the Army did not have detailed supporting information.[53]

A CBO analysis in May 2005 argued that: "it appears that the 48-brigade plan would increase the Army's combat forces by about 5 percent, whereas the 43-brigade plan would produce almost no change in the amount of combat forces available to the Army. In both the 43- and 48-brigade forces, however, more of the Army's combat power would be concentrated in the active component than is the case today, with the active Army's combat forces increasing by either 19 percent or 32 percent and the National Guard's combat forces decreasing by 19 percent."[54]

Congress did generally support the Army's reorganization plans, but questions were raised about both the affordability and effectiveness of the force plan and about the practicality and affordability of the FCS. One key unanswered question was whether the Army would be able to fill out the deployable brigade structure without a permanent increase in end-strength. Another key issue was whether, in the long run, the new Army force design would meet strategic requirements. Among others, retired Army Colonel Douglas MacGregor, one of the original champions of a brigade-centered force, argued that the new brigades were not sufficiently well-equipped to have the necessary flexibility, and that the Army was still preserving too many layers of command.[55]

The current restructuring of US Army forces is only the beginning of efforts to transform the Army. Like the other services, the Army is attempting to solve the problem of meeting its future mission needs through the use of advanced technology and new methods of war fighting. It is seeking to transform what some have called the "revolution in military affairs" or RMA.

The initiatives the Army already has underway to accomplish these goals include:

- Seeking to reinvent net-centric warfare to focus on improving its IS&R capabilities, retaining a heavier legacy force, and creating more human intelligence, MP, and civil-military teams with a higher level of regional and language expertise.
- Development of Future Combat Systems. The focus on "going light" and deploying some 18 major new systems as part of a mix of Future Combat Systems, however, has been deferred for roughly a decade, and funds have been freed up for earlier force transformation in less ambitious areas.
- In May 2005, the Army's 3rd Armored Cavalry Regiment completed months of "innovated training, including a requirement that all officers and soldiers receive basic Arabic language and culture training."[56]

The Army's plans are far more tangible than the vague conceptual goals and priorities of the QDR and Joint Vision documents. At the same time, they raise far more tangible issues about "jointness," effectiveness, practicality, and affordability. The moment a plan becomes tangible, it illustrates just how critical it is to ensure that plans really can be implemented, are affordable, and represent the best overall mix of trade-offs to meet all the priorities of national security. It also shows just how dangerous it is to rely on procurement programs and future technology that the US cannot actually deploy or afford.

The Navy and Force Transformation

The experiences of the other services in transforming their current forces into the forces the US needs and can afford have been equally uncertain. The Navy and Air Force have concentrated on cutting their active combat strength to fund future procurement. However, their track record for estimating their ability to trade current strength for future capability has been one of consistent failure. Both the Navy and the Air Force have consistently overestimated the potential benefits of cutting current forces, and neither service has demonstrated a consistent capacity to estimate the level of future capabilities it can afford through cutting current forces.

The Navy has been downsizing its forces since 1992. It initially sought to rationalize this process with the publication *From the Sea* (1992), which stated the Navy's intent to shift away from mid-ocean combat to littoral waters combat.[57] The end result helped cut the Navy's fleet strength to 288 hulls—approximately half the number it had during the Cold War. However, the Navy correctly said that some of these cuts have been offset by the increased capabilities of its ships, resulting from wireless networks, digital sensors and precision munitions.[58]

The Navy issued another version of its transformational goals in October 2002 titled *Sea Power 21*. This document outlined the Navy's transformational goals and the possible means of achieving them through a framework that includes Sea Strike, Sea Shield, and Sea Basing. The Navy assessed that challenges in the 21st century may include:

- Improved anti-access or area-denial capabilities of other forces, preventing the US from penetrating ports, bases, airfields and littoral areas
- Terrorism
- Weapons of mass destruction

The framework set forth in *Sea Power 21* was designed to counter these threats by moving toward net-centric warfare, using unmanned vehicles (UVs), creating more flexible and smaller naval formations, and being capable of operating in littoral areas. *Sea Power 21* consisted of four components:

- Sea Strike offensive operations were designed to be "direct, decisive and sustained." In order to accomplish this goal, the Navy emphasized the use of intelligence, surveillance, reconnaissance, total force networking, time-sensitive strikes, ship-to-object maneuverability, extended range gunfire, unmanned vehicles and stealthy submarines.[59]

- Sea Shield was intended to move the Navy from its traditional defense duties to aid in homeland defense, including detection of and prevention of the use of WMD, as well as littoral waters domination, which will facilitate its projection of inland defensive power.

- Sea Basing was intended to help the Navy implement Sea Strike and Sea Shield without relying on allies to provide use of their land bases. Although Sea Basing originally was a concept intended for Navy and Marine Corps operations, the Navy would like to use the bases to support joint operations.

- ForceNet was to be a computer program to integrate a network of soldiers, sensors, command and control, weapons and platforms in the Sea Power 21 framework.

The Navy has continued to find new rationales for force transformation. According to the "Global Concept of Operations," issued in 2003, the Navy sought to reorganize its fleet "to support the strategy of forward deterrence and flexibility."[60] Its fleet would be organized into 36 entities or force packages, twelve of which would consist of the Carrier Strike Group (aircraft carrier and supporting ships), and 12 of the Expeditionary Strike Group (amphibious assault vessels with helicopters and Marine combat units, and possibly V-22s and F-35s in the future). The final twelve will consist of surface combatants and converted Trident submarines. Like the Army, these units would be self-contained and modular.[61]

Other "transformational" initiatives include a long series of efforts whose net effect was to try to trade force quantity for force quality by freeing money by reducing existing US forces. These initiatives have led to a steady process of downsizing while still meeting the Navy's steadily declining force goals.

- Sea Swap embodies a rotational crewing concept that will allow ships to be continuously deployed while the ship's crew will rotate out every six months, thereby decreasing operational costs and facilitating the Navy's plan to decrease its end strength.

- A new Fleet Response Plan has been implemented with a new readiness posture designed to improve the Navy's surge capabilities while also lowering costs. According to Gordon England, the fleet response plan "already [has] altered the employment and make-up of naval forces. Today's 290 ships Navy is much more capable than the more than double the size Navy of the late 1980s. Numbers still matter, but only when carefully balanced with capabilities."[62]

- Chief of Naval Operations Adm. Vern Clark said that the Navy no longer needed 375 ships because "Sea Swap and the Fleet Response Plan have changed our Navy. We have literally bought much more operational availability with these concepts, so we can provide the same kind of combat capability for less than 375 ships."[63]

- According to the Navy's 2005 Future Years Defense Plan, the Navy was to reduce its end strength from 373,197 in FY2004 to 345,3000 in FY2007. Military-to-civilian conversions for non-warfighting positions are already underway. At the end of FY 2005, the Navy had converted 2,000 positions and the Marine Corps had converted 1,700 positions. The conversions will help the Navy to decrease its overall end strength (from 373,97 in FY2004 to 345,300 in FY2007) and the Marine Corps to add two more infantry battalions.[64] In addition to transferring civilians into previously held uniformed positions, the procurement of newer ships such as the LCS, DD(X) and CVN-21, which are designed to have smaller crews than their predecessors, will make the decrease in end strength feasible, according to Gordon England.

- Gordon England stated, while Secretary of the Navy, that "Our vision is to create one fully integrated Navy Team and the Navy's active reserve integration is the cornerstone of that effort. We are aligning organizations, training together, consolidating resources and assets, and financially planning as one so we can better operate as one team and 'train like we fight.'…While the numbers of mobilized reserves can

fluctuate as GWOT requirements dictate, our objective is…to keep the number of mobilized personnel at a minimum."[65] England also believes that the National Security Personnel System (NSPS) will help the Navy to move civilians into non-warfighting military positions. As more older ships retire and newer, more efficient and capable ones are introduced, the Navy's military personnel needs will decline.

- A 2002 Tactical Air Integration plan will integrate Marine Corps and Navy tactical aircraft while decreasing the size of the tactical fleet to be purchased by 1,296 but increasing capability.[66]

In taking these steps to move away from its Cold War posture, the Navy focused on acquiring new air and maritime systems that would both allow it to perform new concepts of maritime missions and be a critical component of joint operations. The Navy sought to procure several warships that would transform its capabilities and force structure, including the CVN-21 aircraft carrier, the SSN-774, or Virginia-class, attack submarine, the DD(X) destroyer, and the Littoral Combat Ship (LCS). While these programs have major ongoing cost escalation and program management problems, the platforms have the following goals.

- The CVN-21 is slated to replace the *Nimitz*-class carrier. The CVN-21 requires 1,000 fewer soldiers to operate than *Nimitz*-class carriers, and it is estimated to be four times more effective than carriers used during the First Gulf War in 1991. The CVN-21 will also bring naval aviation into a networked environment.[67]

- The SSN-774 Virginia-class attack submarine is designed to maintain sea control, support expeditionary warfare missions, and collect intelligence. The submarines, along with Sea Basing, will aid the US in maintaining a global presence despite the possibility of decreased access to foreign bases in the future.

- The Littoral Combat Ship (LCS) was designed to provide access to littoral (near-shore) areas. The LCS will have modular, "plug-and-fight" mission payload packages that can be adapted to its one hull design to meet the needs of various missions.

According to the Navy, these more technologically advanced ships have the long-run potential to save money because they will theoretically drive down the Navy's personnel requirements that contribute to the high cost of maintaining a large personnel force, if the procurement costs can be properly managed, if each system has the hoped for effectiveness, if the programs can be deployed on time, and if future needs conform to current predictions.

The Navy has also sought to acquire several aircraft designed to be important components of its transformation. These include the F-35 Joint Strike Fighter, the F/A-18 Super Hornet, and the V-22 Osprey. Unfortunately, the one thing all these programs have in common is that they are in deep trouble. The Navy's plans depend on impractical major weapons programs, procurement rates that cannot be achieved, and force improvements that are undercosted to the point of unaffordability. Like the other services, the Navy has been "stretched" far more by its own planning failures than by the burden of ongoing military operations like the Iraq War.

The Marine Corps and Force Transformation

The US Marine Corps' (USMC) plans for force transformation have sought both to meet the Corps' future needs and to complement the Navy's vision in *Sea Power 21* (2002) and the joint forces' vision in *Joint Vision 2020* (2000) to ensure that the US has sufficient expeditionary forces to carry out the full spectrum of roles, missions and tasks in the new century. *Marine Corps Strategy 21* (2000) set forth how the Marines intended to respond to the challenges of the global century. This document and *Expeditionary Maneuver Warfare* (EMW) lay at the heart of the Marine Corps' force transformation plans.[68]

EMW (2001) provided the foundation for 21st-century peacetime forward deployments, responses to crises worldwide, and warfighting to protect US citizens, allies, and interests

wherever and whenever they may be at risk. It incorporated two previously published operational concepts including 1996's *Operational Maneuver from the Sea* (OMFTS) and 1997's *Ship to Objective Maneuver* (STOM). The concepts in EMW focused on:[69]

- *Joint enabling*, or the ability to use Marine forces to serve as a lead element of a joint task force, act as joint enablers, or serve as a maneuver element to exploit success.
- *Strategic agility*, or the ability to transition rapidly from pre-crisis readiness to full combat capability while deployed in a distant theater.
- *Operational reach*, or the ability to project and sustain relevant and effective power across the depth of a battle space.
- *Tactical flexibility*, or the capability to conduct a range of dissimilar missions concurrently, in support of a joint team across the entire spectrum of conflict.

EMW made the Marine Expeditionary Unit (MEU), composed of 2,000 troops, the basic force component. The USMC resurrected Marine Expeditionary Brigades (MEB) in 1999—they had been disbanded in budget cuts after the Gulf War—to improve the ability of Marine forces to deploy quickly with increased firepower. MEBs, which range in size from 4,000 to 20,000 troops, are to be medium-weight fighting forces that include infantry, armored vehicles, and aircraft. They are smaller than Marine Expeditionary Forces that have 50,000 or more personnel.[70]

The most dramatic development in Marine EMW, however, came with *Operational Maneuver from the Sea* (1996) and the Navy's sea-basing platform. OMFTS applies maneuver warfare to expeditionary power projection and relies extensively on the tightly integrated capabilities of the Navy-Marine Corps team. In effect, OMFTS described the integration of the Navy's visionary sea-basing facilities with a Marine air-ground task force (MAGTF).

The sea-basing concept seeks to eliminate the need for the slow build-up and protection of a traditional beachhead. Rather, sea-basing would allow the MAGTF to exploit the sea as a maneuver space while applying combat power ashore, even well inland, without the need to secure enemy territory or get permission from a neighboring country to build a base of operations. OMFTS affords increased operational flexibility, greater force protection, and enhanced capabilities via sea-based logistics and command and control. The success of OMFTS relied on the deliberate design and integration of Navy and Marine capabilities.[71]

The future of Expeditionary Maneuver Warfare, Operational Maneuver from the Sea, and Ship to Objective Maneuver depends on the development and integration of various concepts and platforms.

- Network Centric Warfare (NCW)—also called FORCEnet—is a central element in the integration of Navy and Marine Corps capabilities that will fundamentally transform joint warfighting. NCW aims to overwhelm an adversary by rapidly disseminating critical information to US combatants, allowing them to make accurate decisions before the enemy. The concept relies on connecting future platforms—such as the DD(X) destroyer, the F-35, the V-22, littoral combat ships, Virginia-class submarines, and amphibious assault ships—via a wide array of electronic networks, sensors, decision aids, and supporting systems designed to help warfighters achieve battlespace dominance.[72]
- An important component of STOM, Distributed Operations (DO) encompasses a new training and operations concept that gives small, distant Marine units more autonomy to operate deep inland. It is designed to create more independent and flexible units that can better fight as smaller, squad-sized units. To this end, DO decentralizes the battalion command structure by pushing decision making down to platoon and squad commanders. This new command structure allows platoons to fight and operate farther away from the battalion and company hub, though still linked to those commands via radio and long-range

communications systems. Employing DO will require new investments in: (1) communications and intelligence-gathering equipment; (2) logistics systems to support units far from headquarters; (3) lightweight body armor and adaptive camouflage; and (4) vehicles to transport units over a large battlefield.[73]

- The Marine Corps also intends to adopt the Navy's sea swap concept. Marines (or sailors) would no longer deploy and return home with the same ship. Instead, Marine expeditionary forces would rotate on and off forward-deployed ships every six months. In between deployments, MEFs would train in the US.

Once again, implementing these concepts and platforms depends heavily on high cost transformational advances in technology. Several platforms were developed to support these transformation concepts.

- The Heavy Lift Replacement (HLR) Program became a critical element of EMW and sea-basing. The Corps concluded that neither joint operating concept could fully enable according to transformation plans without the heavy lift capabilities of the HLR. The HLR development effort will replace the aging fleet of the current Marine Corps heavy-lift aviation platform, the CH-53E "Super Stallion" first fielded in 1981. The CH-53E is not suitable for future operational concepts such as Sea Basing and STOM. The Marine Corp must develop a more capable, survivable, and affordable platform to keep Fleet Maritime Forces effective through the 2025 timeframe.[74] An independent *USMC Vertical Heavy-Lift Mission Analysis of Alternatives* determined that a new-build, CH-53 derivative helicopter—with improved survivability and force protection, expanded range and payload performance, improved cargo handling and turn-around capabilities and lower Operations and Support costs—would be the best HLR solution.[75]

- The MV-22 Osprey—a tiltrotor, vertical take-off and landing aircraft (VTOL)—was intended to provide the requisite medium lift expeditionary needs of the Marine Corps to engage in EMW operations. Designed to replace the aging CH-46E Sea Knight and CH-53D platforms, the MV-22 addresses the force planning concepts of OMFTS and STOM by allowing Marines to strike from greater distances and to penetrate deeper into enemy territory. The MV-22 adds new capabilities in speed, range, and endurance to the Marine Corps assault support fleet. The most significant advantage offered by the MV-22 is the ability to rapidly self-deploy worldwide and arrive with Marines who are ready to fight.[76]

- The Expeditionary Fighting Vehicle (EFV), also known as the Advanced Amphibious Assault Vehicle (AAAV), became another central component of EMW—OMFTS and STOM—warfighting concepts. The USMC's only acquisition category I (ACAT I) acquisition program is a self-deploying, high-water-speed (23-29 mph), armored amphibious vehicle capable of seamlessly transporting Marines from Naval ships located beyond the visual horizon (25 miles or more offshore) to inland objectives. This increased range would reduce the risk to Navy ships from missiles, aircraft, boats, and mines. Once ashore, the EFV will maneuver with an agility and mobility equivalent, at least, to an M1 Abrams tank. The EFV will replace the current Assault Amphibian Vehicle (AAV), which was originally fielded in 1972 and will be more than 35 years old when the EFV begins production in 2008. The Marine Corps plans to procure 1,013 EFVs.[77]

- The new LPD-17 San Antonio class of amphibious landing transport docks was planned to replace four classes of amphibious ships—the LPD 4, LSD 36, LKA 113 and LST 1179—and incorporates both a flight deck and a well deck to support the debarkation of landing craft. The LPD-17 class of ships was designed to transport the Marine Corps' "mobility triad" of EFVs, air-cushioned landing craft (LCAC), and MV-22s to trouble spots around the world.

- The Joint Strike Fighter (JSF) was planned to enter service with the Marine Corps in 2010. An essential feature of the Marine Corps combined arms operations, the JSF provides the reach, flexibility, and reliability called for in EMW. It will replace both the F/A-18C/D and AV-8B and will affirm the Marine Corps' goal of limiting its force of attack aircraft to a single model to reduce support requirements and costs. For the Marines, this short take-off and vertical landing aircraft is particularly appealing for its ability to operate from the decks of amphibious ships, austere sites, and forward operating bases. The JSF's primary mission will be close air support, interdiction, and anti-air warfare.[78]

Like the other services, the USMC has been involved in many additional and more detailed efforts to transform its forces. For example, Marines have begun taking over the training of foreign militaries to help reduce the demands placed on the Army's Special Forces. Part of the 4th

Marine Expeditionary Brigade (Anti-terrorism), the Foreign Military Training Unit (FMTU), provided tailored basic-military-combat-skills training and advisor support for identified foreign military forces in order to enhance the tactical capability of coalition forces in support of SOCOM. The goal in improving the training of friendly foreign troops would pay dividends by reducing the need for US military involvement.

As Col. Peter Petronzio, commanding officer of the FMTU, said: "The FMTU is critical because we want to operate in 'phase zero,' Global War on Terrorism-relevant countries. We want to be ahead of the power curve on the GWOT. If you can send a small group of Marines into a country to help stabilize its ungoverned areas to train them to do for themselves early and often, then you preclude the need five or 10 years down the road to have an expeditionary force go and straighten the situation out."[79]

The Air Force and Force Transformation

The US Air Force (USAF) has actively transformed many aspects of its forces as it has downsized. It has converted its force to highly sophisticated concepts of net-centric warfare and precision strike operations. However, it has also developed a number of formal concepts for additional force transformation.

In its Transformation Flight Plan (AFTFP), first published in 2003 and updated in 2004, the Air Force defined transformation as "A process by which the military achieves and maintains asymmetric advantage through changes in operational concepts, organizational structure, and/or technologies that significantly improve warfighting capabilities or ability to meet the demands of a changing security environment."[80] The document described the Air Force's transformation process as an effort to create an effects-based, capabilities-focused expeditionary air and space force.

Rather than employing a Cold War-style, bottom-up, threat-based approach to force planning that focuses on who an adversary may be or where a war may occur, the Air Force sought to achieve the desired military effects against a range of enemies on a variety of battlefields. In a statement "Regarding Air Force Transformation" before the House Committee on Armed Services Subcommittee on Terrorism, Unconventional Threats and Capabilities, Lt. General Duncan J. McNabb, the Deputy Chief of Staff for Air Force Plans and Programs, said:[81]

> *In the past, we improved our capabilities program by program and platform by platform, focusing development efforts on making each individual system go higher, faster, farther, etc. with little consideration of how it would integrate with other capabilities in the Air Force, in other Services, or in allied militaries. We had to turn this around. Now we look at our National Strategy and determine the effects the Air Force must create. We next determine what capabilities we need. Only then do we talk about what platforms, or combination of platforms/systems, we need to provide these capabilities.*

As part of the 2003 AFTFP, the Air Force developed Air Force Concepts of Operations (CONOPS) to put effects-based force planning into practice. The CONOPS focused on the effects the military planners would like to produce and on the capabilities the planners need to maintain or develop before they consider what expeditionary platforms are required. The Air Force sought to develop six initial CONOPS task forces.

- The Global Strike Task Force developed the Air Force's offensive capabilities—i.e. stealth technology, standoff weaponry, precision, space, and information systems—to defeat enemy defenses and to guarantee that following forces are free to attack and free from enemy attack.

- The Global Mobility Task Force called for the Air Force to provide global mobility, bare basing, and base defense support for combatant commanders in a wide variety of roles ranging from humanitarian aid to evacuation operations.
- The Homeland Security Task Force developed and integrated Air Force capabilities into joint and interagency efforts to prevent, protect against, and respond to a variety of threats against America including enemy aircraft, ballistic missiles, asymmetric terrorist operations, and cyber-terrorism.
- The Global Response Task Force was specifically designed to counter and defeat terrorist targets at immediate risk of attacks. It links intelligence information with alert strike platforms in selected locations so that the platforms can launch and receive updates en route, facilitating rapid, informed responses to fleeting or opportunistic targets.
- The Nuclear Response Task Force comprised the Air Force's contribution to deterring all types of weapons of mass destruction against US or allied forces and works to integrate conventional and nuclear capabilities to provide commanders a full spectrum of responses to counter aggression. Furthermore, the CONOPS made a goal of reducing the number of operationally deployed strategic nuclear weapons to the 1,700-2,200 range.
- The Space and C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) Task Force integrated manned, unmanned, and space systems to provide commanders with accurate, near real-time intelligence information.[82]

The Transformation Flight Plan also described the expansion of America's space-based military systems as integral to the success of near- and long-term force transformation programs. The Air and Space Expeditionary Force (AEF)—using systems ranging from satellites to advanced weapons systems—sought to transform the Air Force into a capabilities-based force based primarily in the US that would remain sufficiently flexible to conduct a wide range of operations throughout the world while accommodating the rapid deployment requirements of today's contingency environment.

Moreover, the AEF's capabilities were to support combat soldiers on the ground and to protect the US from chemical, biological, radiological, nuclear, and high explosive attacks. All military space programs were to combine the following three capabilities: protect space assets, deny adversaries access to space, and quickly launch vehicles and operate payloads into space to quickly replace space assets that fail or are damaged/destroyed.

In the process, the roster of Air Force space programs—as described originally in the 2003 AFTFP, but not mentioned specifically or ruled out in the 2004 AFTFP—became increasingly futuristic and ambitious.[83]

- The Air-Launched Anti-Satellite (ASAT) Missile, a small, air-launched missile capable of intercepting satellites in low Earth orbit and slated as a development beyond 2015.
- The Counter Satellite Communications System to provide the capability by 2010 to deny and disrupt an adversary's space-based communications and early warning system.
- The Counter Surveillance and Reconnaissance System, a near-term program designed to deny, disrupt, and degrade an adversary's space-based surveillance and reconnaissance systems.
- The Evolutionary Air and Space Global Laser Engagement (EAGLE) Airship Relay Mirrors, designed to significantly extend the range of both the Airborne Laser and Ground-Based Laser by using airborne, ground-based, or space-based lasers in conjunction with space-based relay mirrors to project different laser powers and frequencies to achieve a broad range of effects from illumination to destruction.
- Ground-Based Laser technology to propagate a laser beam through the atmosphere to low orbit satellites to provide robust, post-2015 defensive and offensive space control capability.

- Hypervelocity Rod Bundles to provide the capability to strike ground targets anywhere in the world from space.
- The Orbital Deep Space Imager, a mid-term (2010-2015) predictive, near-real time common operating picture of space to enable space control operations.
- The Orbital Transfer Vehicle to add post-2015 flexibility and protection of US space hardware and enables on-orbit servicing of those assets.
- The Rapid Attack Identification Detection and Reporting System encompassed a family of systems that provide near-term capability to determine when a space system is under attack.
- The Space-Based Radio Frequency Energy Weapon, a post-2015 constellation of satellites containing high power radio frequency transmitters that possess the capability to disrupt/destroy/disable a wide variety of electronics and national level command and control systems. That is, it would be used as a non-kinetic, anti-satellite weapon.
- The Space-Based Space Surveillance System, a near-term constellation of optical sensing satellites to track and identify space forces in deep space to enable offensive and defensive counterspace operations.

The 2004 AFTFP did not mention these space systems specifically. However, the spirit of the 2004 document was the same as that of the 2003 document. In fact, the 2004 AFTFP stated that it "does not represent new policy guidance or propose what the Air Force should do, but is instead intended to reflect decisions, information, and initiatives already made and/or approved by the Air Force capability-based planning, programming and budgeting process."[84]

The Air Force also pursued new technologies to provide a tactical and operational advantage to dominate air, space, and cyberspace. These programs have all developed serious cost and effectiveness issues. Like the other services and their pet programs, the Air Force considers these new technolgies to be central to its ongoing transformation efforts.[85] They include:

- The development of high performance stealth aircraft, such as the F/A-22 and the Joint Strike Fighter (JSF), to define the Air Force's vision for the future of the world's most affordable, lethal, supportable, and survivable assault aircraft.
- The Joint Unmanned Combat Air Systems (J-UCAS) program—a joint DARPA-Air Force-Navy consortium formed in 2003—to develop unmanned combat aerial vehicles (UCAVs). This joint demonstration program was designed to demonstrate the technical feasibility, operational utility, and operation value of a networked system of high performance UCAVs to effectively and affordably prosecute 21st century combat missions. The key capabilities of UCAVs currently in development will include: Suppression of Enemy Air Defenses (SEAD); electronic attack (EA); precision strike; surveillance/reconnaissance; and persistent global attack within the emerging global command and control architecture. The system focuses on combat situations and environments that involve deep, denied enemy territory and the requirement for a survivable, persisting combat presence.[86] As of June, 2005, the Air Force had 750 UAVs.[87]
- The Advanced Close Air Support System (ACASS) to comprise the Air Force's and the Army's primary joint, network-centric platform for facilitating communication between air and ground forces. Technological advances now allow for the quick generation of accurate geospatial targeting co-ordinates on the ground and their transfer to strike aircraft waiting above.[88] UAVS also employ ACASS technology to provide streaming video to terrestrial maneuver commanders.
- Directed-energy weapons, non-projectile weapons that employ directed energy---usually in the form of electromagnetic radiation or particle beams---to damage, interfere with or otherwise disable enemy equipment, facilities, or personnel. The Air Force's airborne laser program is a plan to mount a chemical oxygen iodine laser on a modified Boeing 747-400F and use it to shoot down ballistic missiles during their boost phase.

The Air Force has also proposed many less ambitious programs to achieve transformational effects. The Air Combat Command approved the acquisition strategy for smaller, more accurate munitions on January 6, 1998. The Small Diameter Bomb (SDB) program (formerly know as the Miniaturized Munitions Capability Program) addressed two major problems with current munitions. First, stealth aircraft like the F-117, the B-2, the F-22, and the JSF have relatively limited space for weapons if they are flown in a stealthy configuration with their weapons carried internally. The size of current munitions forced pilots to fly more missions to achieve the same battlefield effect. Second, current munitions were often not suitable for destroying specific targets in populated areas with minimal collateral damage—i.e. US attacks on Belgrade during the 1999 NATO-Yugoslavia conflict.

The SDB offered a solution to both problems. At 250 pounds, the SDB was half the weight of the smallest bomb the Air Force uses today (the 500-pound Mark 82), but the SDB has the same penetration capabilities as the 2000-pound BLU-109. Coupled with either INS/GPS guidance technology or terminal seeking and automatic target recognition capabilities, the SDB was suitable for either stationary, fixed or mobile, relocatable targets. The Air Force expected to deploy the SDB on the F-15E in 2006 and to other aircraft shortly thereafter.[89]

Another example of the Air Force's less ambitious transformational programs was advanced C4I, command, control, communications, computer applications, and intelligence processing, technologies to provide a communicable understanding—a single integrated air picture (SIAP)—of what is going on in a broad geographical area. Commanders use C4I technologies to convert an understanding of a battle space into missions and assignments designed to affect that battle space.

The Need to Transform "Transformation"

It should be noted that an examination of US strategy and force plans does not reveal fatal defects or some imminent crisis. It does, however, reveal a series of problems and issues the US has failed to address in ways that ensure its military capabilities are both affordable and meet its future needs.

The Quadrennial Defense Reviews have made progress in dealing with the issues raised by the end of the Cold War, the Iraq War, the War on Terrorism, peacemaking, and homeland defense. The Joint Vision documents have made some progress towards truly integrating the capabilities of the US services. The strategic and force planning documents of the individual services have also made progress in transforming the total force, even if they have exposed serious problems in real jointness, realistic force planning, and in matching plans with resources in the process.

The key message, however, is that the US must transform at least one aspect of its approach to transformation. It is brutally clear that strategy and planning documents that are not integrated with force planning and long-term budgets can often become hollow wish lists or—at a minimum—part of the problem as well as part of the solution. All meaningful strategy and planning requires explicit decisions about the size and character of forces and programs. Strategy and planning requires explicit identification of major problems and hard, explicit decisions about the necessary trade-offs to make programs realistic and affordable. By this standard, the 2006 QDR simply symbolizes a process of continuing failure—of planning by hope and wish list and an abdication of the fundamental responsibilities of leadership and management.

It is sometimes argued that planning to meet resource constraints inhibits strategic innovation and the effort to determine what resources are really needed. The reality is that anyone can express broad strategic concepts and ask for more than they can get. The Department of Defense

currently wastes tens of thousands of man hours on a process that at best can be described as a "triumph of hope over experience."

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